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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R2-ES-2021-0143; FF09E21000 FXES1111090FEDR 234]

RIN 1018–BF90

Endangered and Threatened Wildlife and Plants; Endangered Species Status for Texas Kangaroo Rat and Designation of Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the Texas kangaroo rat *(Dipodomys elator)*, a rodent from north-central Texas, as an endangered species and designate critical habitat under the Endangered Species Act of 1973, as amended (Act). This determination also serves as our 12-month finding on a petition to list the Texas kangaroo rat. After a review of the best available scientific and commercial information, we find that listing the species is warranted. Accordingly, we propose to list the Texas kangaroo rat as an endangered species under the Act. If we finalize this rule as proposed, it would add this species to the List of Endangered and Threatened Wildlife and extend the Act's protections to this species and its critical habitat. We also propose to designate critical habitat for the Texas kangaroo rat under the Act. In total, approximately 597,069 acres (241,625 hectares) in Childress, Cottle, Hardeman, Wichita, and Wilbarger Counties, Texas, fall within the boundaries of the proposed critical habitat designation. We also announce the availability of a draft economic analysis (DEA) of the proposed designation of critical habitat for Texas kangaroo rat.

DATES: We will accept comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. eastern time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically*: Go to the Federal eRulemaking Portal: *https://www.regulations.gov*. In the Search box, enter FWS-R2-ES-2021-0143, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on "Comment."

(2) *By hard copy*: Submit by U.S. mail to: Public Comments Processing, Attn: FWS-R2-ES-2021-0143, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *https://www.regulations.gov*. This generally means that we will post any personal information you provide us (see **Information Requested**, below, for more information).

Availability of supporting materials: Supporting materials, such as the species status assessment report, are available on the Service's website at *https://fws.gov/office/arlington-ecological-services*, at *https://www.regulations.gov* at Docket No. FWS-R2-ES-2021-0143, or both. For the proposed critical habitat designation, the coordinates or plot points or both from which the maps are generated are included in the decision file for this critical habitat designation and are available at *https://www.regulations.gov* at Docket No. FWS-R2-ES-2021-0143.

FOR FURTHER INFORMATION CONTACT: Beth Forbus, Regional Endangered Species Program Manager, Southwest Regional Office, 500 Gold Ave. SW, Albuquerque, NM 87102; telephone 505–318–8972. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species warrants listing if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become endangered within the foreseeable future throughout all or a significant portion of its range). If we determine that a species warrants listing, we must list the species promptly and designate the species' critical habitat to the maximum extent prudent and determinable. We have determined that the Texas kangaroo rat meets the definition of an endangered species; therefore, we are proposing to list it as such and proposing a designation of its critical habitat. Both listing a species as an endangered or threatened species and designating critical habitat can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 et seq.).

What this document does. We propose to list the Texas kangaroo rat as an endangered species, and we propose the designation of critical habitat for the species.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C)

disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that the Texas kangaroo rat is endangered due to the following threats: habitat loss, degradation, or fragmentation from loss of historical ecosystem function; conversion of rangeland to cropland; development (including commercial development and energy development); and woody vegetation encroachment (Factors A and E); and the effects of climate change (Factor E).

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary), to the maximum extent prudent and determinable, to designate critical habitat concurrent with listing. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of the species, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns and the locations of any additional populations of this species;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Threats and conservation actions affecting the species, including:

(a) Factors that may be affecting the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(b) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species.

(c) Existing regulations or conservation actions that may be addressing threats to this species.

(3) Additional information concerning the historical and current status of this species.

(4) Specific information on:

(a) The amount and distribution of Texas kangaroo rat habitat;

(b) Any additional areas occurring within the range of the species, north-central Texas (Archer, Baylor, Childress, Clay, Cottle, Foard, Hardeman, Montague, Motley, Wichita, and Wilbarger Counties) and southern Oklahoma (Comanche and Cotton Counties), that should be included in the critical habitat designation because they (i) are occupied at the time of listing and contain the physical or biological features that are essential to the conservation of the species and that may require special management

considerations, or (ii) are unoccupied at the time of listing and are essential for the conservation of the species; and

(c) Special management considerations or protection that may be needed in critical habitat areas we are proposing, including managing for the potential effects of climate change; and

(d) Whether occupied areas are adequate for the conservation of the species, as this will help us evaluate the potential to include areas not occupied at the time of listing. Additionally, please provide specific information regarding whether or not unoccupied areas would, with reasonable certainty, contribute to the conservation of the species and contain at least one physical or biological feature essential to the conservation of the species. We also seek comments or information regarding whether areas not occupied at the time of listing qualify as habitat for the species.

(5) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed critical habitat.

(6) Any probable economic, national security, or other relevant impacts of designating any area that may be included in the final designation, and the related benefits of including or excluding specific areas.

(7) Information on the extent to which the description of probable economic impacts in the draft economic analysis is a reasonable estimate of the likely economic impacts.

(8) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act, in particular any areas covered by the Candidate Conservation Agreement with Assurances for the Texas Kangaroo Rat (CCAA) or other conservation agreement providing benefits to the Texas kangaroo rat. To obtain a copy of

the CCAA, visit *https://www.fws.gov/office/arlington-ecological-services*. If you think we should exclude any additional areas, please provide information supporting a benefit of exclusion.

(9) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, do not provide substantial information necessary to support a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made solely on the basis of the best scientific and commercial data available, and section 4(b)(2) of the Act directs that the Secretary shall designate critical habitat on the basis of the best scientific data available.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *https://www.regulations.gov*, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *https://www.regulations.gov*.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *https://www.regulations.gov*.

Our final determination may differ from this proposal because we will consider all comments we receive during the comment period as well as any information that may become available after this proposal. Based on the new information we receive (and, if relevant, any comments on that new information), we may conclude that the species is threatened instead of endangered, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species. For critical habitat, our final designation may not include all areas proposed, may include some additional areas that meet the definition of critical habitat, or may exclude some areas if we find the benefits of exclusion outweigh the benefits of inclusion and exclusion will not result in the extinction of the species. In our final rule, we will clearly explain our rationale and the basis for our final decision, including why we made changes, if any, that differ from this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the *Federal Register* and local newspapers at least 15 days before the hearing. We may hold the public hearing in person or virtually via webinar. We will announce any public hearing on our website, in addition to the *Federal Register*. The use of virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).

Previous Federal Actions

We identified the Texas kangaroo rat as a Category 2 candidate in December 1982 (47 FR 58454). Category 2 candidates were defined as species for which we had information that proposed listing was possibly appropriate, but conclusive data on biological vulnerability and threats were not available to support a proposed rule at the time. The species remained so designated in subsequent annual candidate notices of review (50 FR 37958, September 18, 1985; 54 FR 554, January 6, 1989; 56 FR 58804, November 21, 1991; 59 FR 58982, November 15, 1994). In the February 28, 1996, Candidate Notice of Review (61 FR 7596), we discontinued the designation of Category 2 species as candidates; therefore, the Texas kangaroo rat was no longer a candidate species.

On January 11, 2010, we received a petition from WildEarth Guardians requesting that we list the Texas kangaroo rat as an endangered or threatened species under the Act and to designate critical habitat. We published a 90-day finding on March 8, 2011 (76 FR 12683) that the petition presented substantial information that listing the Texas kangaroo rat may be warranted.

Peer Review

A species status assessment (SSA) team prepared an SSA report for the Texas kangaroo rat. The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we solicited independent scientific review of the information contained in the Texas

kangaroo rat SSA report. We sent the SSA report to five independent peer reviewers and received two responses. Results of this structured peer review process can be found at *https://www.regulations.gov*. In preparing this proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which is the foundation for this proposed rule.

Summary of Peer Reviewer Comments

As discussed in **Peer Review** above, we received comments from two peer reviewers on the draft SSA report. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding the information contained in the SSA report. The peer reviewers generally concurred with our descriptions of Texas kangaroo rat biology and factors influencing the species. The peer reviewers provided additional information, clarifications, and suggestions, including clarifications in species behavior, such as use of unpaved roads and other habitat types, and discussions of climate change and models used to identify potential habitat. There were several questions and comments about the resiliency metrics used, and based on these comments, we further clarified these metrics in the SSA report for the species. Otherwise, no substantive changes to our analysis and conclusions within the SSA report were deemed necessary, and peer reviewer comments are addressed in version 1.0 of the SSA report.

I. Proposed Listing Determination

Background

The Texas kangaroo rat is one of more than 20 kangaroo rats found in North America in the family Heteromyidae and genus *Dipodomys* (Genoways and Brown 1993, pp. 40–42). The Texas kangaroo rat is a nocturnal, seed-eating rodent that historically occurred across 3.4 million acres (ac) (1.4 million hectares (ha)) of north-central Texas (Archer, Baylor, Childress, Clay, Cottle, Foard, Hardeman, Montague, Motley, Wichita, and Wilbarger Counties) and southern Oklahoma (Comanche and Cotton Counties). It is

now found in the grassland and rangeland habitats of the Southwestern Tablelands and Central Great Plains within Texas, where its range occurs across 1.4 million ac (0.6 million ha) in five counties (Childress, Cottle, Hardeman, Wichita, and Wilbarger) (see figure 1, below). It is associated with areas characterized by bare ground and short-statured vegetation, which facilitate locomotion and forage trails, burrow construction, and predator avoidance (Nelson et al. 2009, pp. 127–128; Nelson et al. 2011, p. 15). For the purposes of this proposed rule, we define short-statured vegetation as herbaceous plant species observed at a shortened height rather than their potential maximum height. This definition includes young plants and plants that have been shortened by mechanical, chemical, or biological means.

Historically, these rangeland habitats were occupied by large concentrations of American bison *(Bison bison)* and black-tailed prairie dog *(Cynomys ludovicianus)* colonies, which, along with wildfire, contributed to maintaining the ideal conditions to support the Texas kangaroo rat's habitat needs (Koford 1958, pp. 69–70; Coppock et al. 1983, p. 10).

Texas kangaroo rats have long hind feet, a long tail, and external cheek pouches (Dalquest and Horner 1984, p. 118). The fur on their upper bodies is a pale yellow-brown color with blackish guard hairs, and their undersides are white. Their nearly hairless ears are small and eyes relatively large. Their laterally white-striped, thick tail has a conspicuous white tuft of hair on the tip. Their bodies are relatively large, averaging 4.7 inches (in) (12 centimeters (cm)) in length with a tail that adds 7.7 in (19.6 cm) (Schmidly 2004, p. 366). The sexes are superficially indistinguishable (Strassman 2004, p. 2); however, males may be generally larger than females (Best 1987, p. 57). Like other *Dipodomys* spp., both male and female Texas kangaroo rats possess skin glands dorsally between their shoulders, which communicate sexual receptivity (Stangl et al. 2006, p. 466). Texas kangaroo rats use their long hind feet for saltatorial (jumping) locomotion

and escaping predators (Genoways and Brown 1993, p. 297).

The lifespan of Texas kangaroo rats in the wild is approximately 2 years (Martin 2002, p. 28). Texas kangaroo rats appear capable of breeding throughout the calendar year, with peak times in February and August. Females give birth to a litter of an average of 2.7 pups, and young-of-year are able to birth their first litter within a single year (Packard 1976, p. 3; Carter et al. 1985, p. 1; Martin 2002, p. 29). Each individual establishes a territory where they construct a burrow and forage for themselves and their offspring. Dispersing individuals generally stay within 3,281 feet (ft) (1,000 meters (m)) of their natal burrows when establishing new territories (Genoways and Brown 1993, p. 585). Territories encompass an average of 0.2 ac (0.1 ha) (Roberts and Packard 1973, p. 960). Bare ground is an important component of each territory as males and females display sexual receptivity by dust bathing at bare-ground sites within their territory and leaving their "scent" (an oily substance exuded by their skin glands) (Genoways and Brown 1993, pp. 360, 576, 578; Stangl et al. 2006, pp. 467–468; Goetze et al. 2008, pp. 312–313).

For shelter, reproduction, and food storage, Texas kangaroo rats use subterranean tunnels, which they dig into loose, friable clay soils. Their burrows have several chambers branching from the main tunnel and contain multiple entrances (Roberts 1969, p. 18). Burrows are typically 14 to 18 in (36 to 46 cm) deep and 8 ft (2.4 m) long (Lewis 1970, p. 8). Texas kangaroo rats are non-colonial and non-social (Dalquest and Collier 1964, p. 147; Packard and Roberts 1973, p. 681), so each burrow usually contains a single adult (Goetze et al. 2008, p. 315). They are opportunistic seed gatherers (Martin 2002, p. 31), primarily eating grass seeds as well as fruits and flowers from forbs (Chapman 1972, pp. 878–879). Food items are not consumed immediately, but instead are placed in cheek pouches and later cached inside their burrows (Goetze et al. 2008, pp. 311–315). It is assumed that, like other *Dipodomys* spp., Texas kangaroo rats forage

within 328 ft (100 m) of their burrows (Veech et al. 2018, p. 6).

For more information, please refer to the SSA report (version 1.0; Service 2021, pp. 1–18), which presents a thorough review of the taxonomy, life history, and ecology of the Texas kangaroo rat.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species. In 2019, jointly with the National Marine Fisheries Service, the Service issued a final rule that revised the regulations in 50 CFR part 424 regarding how we add, remove, and reclassify endangered and threatened species and the criteria for designating listed species' critical habitat (84 FR 45020; August 27, 2019). On the same day, the Service also issued final regulations that, for species listed as threatened species after September 26, 2019, eliminated the Service's general protective regulations automatically applying to threatened species the prohibitions that section 9 of the Act applies to endangered species (84 FR 44753; August 27, 2019).

The Act defines an "endangered species" as a species that is in danger of extinction throughout all or a significant portion of its range and a "threatened species" as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term "threat" to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term "threat" includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term "threat" may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an "endangered species" or a "threatened species." In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets

the definition of an “endangered species” or a “threatened species” only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term “foreseeable future,” which appears in the statutory definition of “threatened species.” Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term “foreseeable future” extends only so far into the future as we can reasonably determine that both the future threats and the species’ responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. “Reliable” does not mean “certain”; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define the foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species’ likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species’ biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be proposed for listing as an endangered or threatened species under the Act. However, it does provide the scientific basis that

informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies.

To assess the Texas kangaroo rat's viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years), redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate conditions, pathogens). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket No. FWS-R2-ES-2021-0143 on

https://www.regulations.gov.

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability. We analyze these factors both individually and cumulatively to determine the current condition of the species and project the future condition of the species under several plausible future scenarios.

Species Needs

We assessed the best available information to identify the physical and biological needs to support all life stages for the Texas kangaroo rat. Several important habitat parameters vary from the eastern to the western portions of the species' range, such as vegetation type, precipitation, and amount of woody cover. The structural nature of vegetation and soils within occupied areas has been well-studied, and there is evidence that specific soil types and vegetation structure are important for the Texas kangaroo rat; however, other specific needs, especially those related to the species' demographics, are unknown (see the SSA; Service 2021, pp. 14–18). Based upon the best available scientific and commercial information, and acknowledging existing ecological uncertainties, we recognize that Texas kangaroo rats need loose, loam/clay-loam soil for burrowing; some form of topographic relief (e.g., prairie mounds or roots of shrubs) not prone to flooding to support the burrow structure; adequate space (0.2 ac (0.1 ha)) for individual territories; bare ground for dust bathing (to ameliorate parasites) and scent marking (for territory delineation/sexual receptivity); and short-statured grasses and forbs with sparse canopy cover for foraging and travel corridors.

Although no rangewide estimate of the number of Texas kangaroo rats exists, many recent rangewide surveys have been conducted. The few studies that published

statistics on local abundance reported ranges of 2 to 10 individuals per hectare (1 to 5 individuals per acre) of suitable habitat (Roberts and Packard 1973, p. 960; Goetze et al. 2007, pp. 20–21; Martin 2002, p. 25). Surveys have documented that the Texas kangaroo rat exhibits a particularly dynamic distribution, with only a few locations known to be continuously occupied through time (Service 2021, pp. 10–11). Recent studies have documented sporadic detections since 1985, with Texas kangaroo rats disappearing from previously occupied areas or reappearing in areas where it had been absent (Service 2021, p. 11). These temporal and spatial distribution changes are believed to be dependent on the use of travel corridors and the availability of suitable habitat; thus, we recognize habitat connectivity between sites as an important species need that facilitates dispersal (Service 2021, pp. 15–17).

The most recent surveys for the species were conducted between 2015 and 2022 by two separate labs: Texas Tech University (Stuhler and Stevens 2023, entire) and Texas State University (Veech et al. 2022, entire). Surveys by both labs conducted from 2020 to 2022 revealed very few individuals compared to surveys conducted from 2015 to 2017 even though the researchers conducted a similar or even higher level of survey effort. Sites where the species could be reliably detected in the past have not had any recent evidence of Texas kangaroo rats, despite having suitable habitat considered by experts to be in good condition. Because the results of these surveys were published just recently, they were not incorporated into the SSA analysis. However, they do not contradict or conflict with the information that was used and would not significantly alter the results of the analysis.

We delineated analysis units for the Texas kangaroo rat based on recent occupancy information. We used data from three surveys (two rangewide and one covering part of the range) conducted between 2015 to 2018 that resulted in 285 detections in Texas and no evidence of occupied areas in Oklahoma, where it is

considered extirpated (Braun 2017; Veech et al. 2018; Ott et al. 2019; Stuhler et al. 2019). These surveys represented the best available scientific information at the time of the SSA analysis. Using these survey data, we determined the Texas kangaroo rat currently exists within four groups, or analysis units. We named the analysis units based on their position relative to one another within north-central Texas: East, Central, North, and West Units (figure 1). The total area of the four analysis units is approximately 274,287 ac (111,000 ha), ranging from the largest (East Unit) of approximately 115,398 ac (46,700 ha) to the smallest (West Unit) of approximately 44,973 ac (18,200 ha). For the purposes of our analysis, these four units define areas where a concentration of Texas kangaroo rat activity suggests a relatively isolated group of individuals. Large distances and habitat fragmentation resulting from anthropogenic landscape features, such as highways and developed areas, separate the units. While it is possible that individuals could occur outside the boundaries of the four units, we determined that it would be unlikely for individuals to successfully disperse or travel between them.

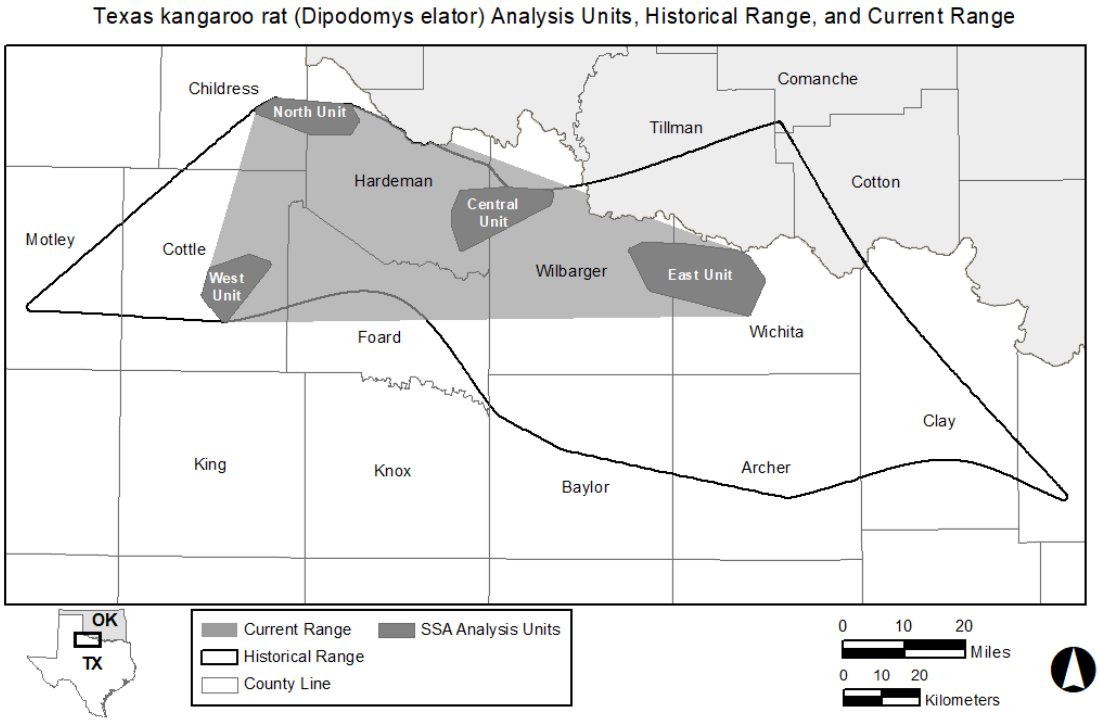


Figure 1. Estimated current and historical range of the Texas kangaroo rat with the four analysis units identified in the SSA report. The boundary of the historical range is based on all known detections of Texas kangaroo rats since the species was described in 1894; however, no

individuals have been detected in Tillman County, Oklahoma, though they may have once occurred there based on proximity of other records.

To assess resiliency, we evaluated five components that broadly relate to the species' physical environment or its population demography. Standardized survey data, which represents individuals detected, was combined with four metrics determined to have the most influence on the suitability of the species' physical environment: availability of potential habitat, proportion of suitable road edge habitat, percentage of cropland, and percentage of high-density woody cover.

To assess representation, we evaluated the ecological and genetic diversity across the current range of the species. It is important to have sufficiently resilient populations (analysis units) where both genetic and ecological differences are apparent to maintain the existing adaptive capacity. To evaluate representation in the current condition of the Texas kangaroo rat, we consider both genetic information and the geographic distribution of populations. At a minimum, at least one moderate or highly resilient analysis unit should be represented in areas where both genetic and ecological differences exist within the species' range to maintain adequate representation.

To assess redundancy, we considered the number and distribution of populations across the range of the species and the potential for catastrophic events to impact the Texas kangaroo rat's ability to maintain viability. To have high redundancy, the species would need to have multiple populations distributed across a large area relative to the scale of anticipated catastrophic events.

Factors influencing species viability

Loss and Conversion of Habitat

The primary factor influencing the viability of the Texas kangaroo rat is habitat loss and conversion, largely related to historical land use changes. The ecological processes within the geographic range of the species were historically influenced by the presence of American bison, black-tailed prairie dog, and periodic wildfire. Together,

these three components helped to create a mosaic of habitat features on the landscape that included the short-statured vegetation interspersed with areas of bare ground and minimal woody cover preferred by the Texas kangaroo rat. This ecological association greatly affected vegetation succession and composition within the Great Plains region (Koford 1958, pp. 69–70; Coppock et al. 1983, p. 10).

At one time, the foraging habits of bison and prairie dogs maintained patches of short grasses and bare ground across the Great Plains (Krueger 1986, p. 769). Bison preferred grasslands where prairie dog colonies existed, using the area for foraging and wallowing (Tyler 1968, p. 17; Coppock and Detling 1986, p. 452; Chipault and Detling 2013, p. 171; Wydeven and Dahlgren 1985, p. 809). Prairie dog foraging reduced shrub growth, affected vegetation height and structure, and increased the amount of bare ground within the colonies (Agnew et al. 1986, p. 138; Weltzin et al. 1997b, p. 760; Kotliar et al. 1999, p. 178). In places where other species of kangaroo rat (e.g., the Ord's kangaroo rat (*Dipodomys ordii*)) coexist with prairie dogs today, the patches of short, clipped grass and bare ground may facilitate kangaroo rat dispersal (Service 2021, p. 19). Bison once numbered in the tens of millions across their range, and prairie dog colonies once occupied 100 to 250 million ac (40 to 100 million ha) (Knapp et al. 1999, p. 39; Miller et al. 2007, p. 678). The expansion of Euro-Americans into the West beginning in the 1800s led directly to the decline of bison and black-tailed prairie dogs. By the early 1900s, bison were near extinction, and prairie dog control substantially reduced once-large colonies of black-tailed prairie dogs across the Great Plains, and in north-central Texas specifically (Weltzin et al. 1997a, p. 251).

Fire also historically shaped prairies. In the Great Plains, it influenced the spread of grasslands and reduced tree and shrub proliferation (Axelrod 1985, pp. 187–188). Periodic burning of grasslands increased species diversity and maintained ecosystem functions (Ryan et al. 2013, pp. e17–e18) but also attracted prairie dogs and bison

(Coppock and Detling 1986, p. 454; Coppedge and Shaw 1998, p. 262; Augustine et al. 2007, p. 541). These complex interactions contributed to maintaining the dynamic prairie ecosystem. Since Euro-American expansion to the area, regular prairie fires have been scarce, leading to an increase in shrub encroachment across the prairie landscape. The alteration of the bison, prairie dog, and fire complex has led to increased shrub canopy (Service 2021, p. 7).

For the Texas kangaroo rat, woody plant encroachment represents a loss of suitable habitat, as the species avoids areas of dense vegetation and closed canopy cover. Within the microhabitats surrounding individual burrow sites, woody canopy cover averages less than one percent (Ott et al. 2018, p. 16). Across the broader habitat, native woody plants such as honey mesquite *(Prosopis glandulosa)* can increase at a rate of up to 2.3 percent per year when they are not managed (from 14.6 to 58.7 percent over 20 years; see Ansley et al. 2001, pp. 171–172 and Barger et al. 2011, p. 3), quickly spreading and replacing suitable Texas kangaroo rat habitat. Prescribed fires are not often used to manage woody species within the range of the Texas kangaroo rat for various reasons, including the presence of oil field equipment and limitations from drought; in addition, mechanical means of shrub removal are prohibitively expensive (Stasey et al. 2010, pp. 11–12). These circumstances allow areas to develop dense stands of mesquite and herbaceous understory, which is unsuitable habitat for the Texas kangaroo rat.

Although the loss of the bison, prairie dog, and fire complex has negatively impacted the availability of habitat for the Texas kangaroo rat, grazing cattle can act as a disturbance surrogate to create conditions that are suitable for Texas kangaroo rats. Disturbance created by cattle grazing resulted in higher numbers of Texas kangaroo rats when compared to ungrazed areas at a Texas ranch, likely due to the presence of bare ground and lack of dense vegetation (Nelson et al. 2009, p. 126; Stasey et al. 2010, pp. 9–

12). Much like bison and prairie dogs, cattle can create and maintain short-statured grass and bare ground.

However, cattle tend to occur in different areas and do not use the habitat in the same way as bison and prairie dogs. When present, bison were more likely to occur in upland grassland areas favored by Texas kangaroo rats. Bison are not limited by distance to a water source and prefer grasslands, whereas cattle often prefer to forage near permanent water sources or areas with woody vegetation (Allred et al. 2011, p. 8; Knapp et al. 1999, p. 46). Of most importance, cattle confinement through fenced pastures leads to reduced biological diversity relative to a landscape grazed by wandering bison (Benedict et al. 1996, p. 155). Both cattle and prairie dogs are grazers, but unlike cattle, prairie dogs also move soil, influence nutrient cycling, increase nitrogen in soils and plants, and facilitate water infiltration (Miller et al. 2007, p. 2807; Whicker and Detling 1988, entire). For species such as the Texas kangaroo rat that require open areas within habitat, prairie dog colonies can create more bare ground than high-intensity cattle grazing (Augustine and Derner 2012, p. 726). Additionally, high-intensity cattle grazing coupled with lack of fire can quicken the conversion of grasslands to shrublands (Brennan and Kuvlesky 2005, p. 6). For these reasons, domestic cattle may be able to replace some lost historical ecosystem functions, but only in a limited capacity.

The conversion of native rangeland to cropland has resulted in a direct loss of habitat because the Texas kangaroo rat does not typically construct burrows in soils of agricultural crops (Martin and Matocha 1972, p. 874; Martin 2002, pp. 33–34; Goetze et al. 2007, p. 18; Goetze et al. 2008, p. 313; Nelson et al. 2009, pp. 119–120; Ott et al. 2019, p. 627). Ground disturbance caused by plowing and disking associated with cultivating cropland disturbs the soil substrate, resulting in a loss of burrowing habitat in areas that would have previously supported the species. The establishment of cropland has eliminated native foraging areas, although some cropland edges may provide a forage

base, at least opportunistically. The conversion of rangeland to cropland has also led to increased habitat fragmentation, as it presents a barrier to movement and dispersal, since it appears Texas kangaroo rats do not traverse active croplands seeking food, shelter, or mates as they would in native rangeland habitats (Stangl et al. 1992, p. 31; Goetze et al. 2008, pp. 312–318). The amount of cropland acres in Texas increased along with the human population until the 1950s (Dethloff and Nall 2010, entire). Since then, the number of acres in farming has remained largely the same with some areas seeing a slight decline (USDA Census of Agriculture 2020, unpaginated).

The Conservation Reserve Program (CRP) is a voluntary program that provides incentives for private landowners to convert croplands to perennial grasslands to provide cover for the prevention of soil erosion. It was introduced through the Farm Bill in 1985 and provides short-term protection of previously cultivated lands. Under the program, the amount of enrolled land fluctuates as contracts expire or new lands are enrolled (USDA Farm Service Agency 2016, p. 22). In the Great Plains, enrolled CRP lands are largely planted with mid- and tallgrass species that often remain undisturbed for the entirety of their 10- to 15-year contracts (McLachlan and Carter 2009, p. 28). As a result, vegetation structure in CRP fields often includes taller, more dense vegetation that differs from native shortgrass or mixed-grass prairie (Bidwell and Engle 2005, p. 16). While CRP lands benefit some species, shortgrass-adapted birds or mammals such as the Texas kangaroo rat may find CRP lands to be poor-quality habitat because the vegetation structure does not meet their needs (Kamler et al. 2003, p. 993; McLachlan and Carter 2009, p. 30). Managed haying and grazing are permitted in CRP fields to improve the quality of the land for wildlife, but the frequency of haying/grazing (no more than 1 out of every 3 years) may not be sufficient to maintain short vegetation structures (Noto and Searchinger 2005, p. 153). Because the Texas kangaroo rat requires short-statured vegetation with bare ground and limited woody cover, lands enrolled in CRP may not be

suitable habitat for the species (Martin 2002, p. 33; Nelson et al. 2013, p. 12; Ott et al. 2019, p. 626). Thus, the amount and distribution of CRP land within the range of the Texas kangaroo rat may provide some habitat along the edge of the fields or serve as connectivity corridors; however, the lands likely have a negative influence on the amount of available habitat overall.

Since the introduction of CRP, peak enrollment acres within the Texas portion of the species' historical range generally occurred from 1989 to 1998, cumulatively peaking at approximately 239,692 ac (97,000 ha). Since then, enrolled acres have generally decreased over time to approximately 126,024 ac (51,000 ha) over the past decade. Counties in the western portion of the historical range (Childress, Cottle, Foard, Hardeman, and Motley Counties) have substantially more enrolled acres than the eastern portion (see Service 2021, p. 25). The influence of CRP on the species' distribution may be similar to cropland by limiting movement and dispersal, limiting potential burrow sites, and reducing native forage. However, CRP lands do not include the same edge characteristics as cropland that, as discussed above, have the potential to provide marginal habitat for the Texas kangaroo rat (Ott et al. 2019, p. 624). As such, the conversion of cropland to CRP is expected to have a slightly negative impact on the Texas kangaroo rat.

The development of roads within Texas kangaroo rat habitat has had mixed impacts on the species. Both paved and unpaved (dirt) roads represent a loss of native grassland or rangeland habitat and have the potential to fragment the species' range; however, survey data show a complex relationship. Because of limited access for surveys on private lands, surveying for Texas kangaroo rats using mostly the public unpaved road systems has been common practice and accounts for a substantial proportion of all published detections. Road surveys, which involve sighting individuals while driving or walking along roads, have resulted in Texas kangaroo rats being frequently observed

using burrows in the narrow strip of habitat adjacent to unpaved roads (Stangl et al. 1992, p. 26; Martin 2002, p. 19; Nelson et al. 2013, p. 8). For similar species (e.g., Stephen's kangaroo rat *(Dipodomys stephensi)* in California), unpaved roads can provide substitute habitat for areas of bare ground and sparse grass cover and can be used for burrowing, foraging, dust bathing, and scent marking (Brock and Kelt 2004, p. 638). They may connect larger areas of suitable habitat and support dispersal between sites.

While unpaved roads may function as nontraditional habitat and travel corridors, paved and gravel roads have an overall negative impact. Paved and gravel roads substantially reduce or eliminate bare ground and provide a hard substrate assumed to be of limited use by Texas kangaroo rats (Goetze et al. 2016, p. 229). Paved roads have a higher traffic volume, allow greater vehicle speed, and are generally wider than unpaved roads. Small mammals avoid crossing paved or gravel roads (Oxley et al. 1974, p. 56; Merriam et al. 1989, pp. 231–232). Additionally, small mammals are often killed by traffic (Adams and Geis 1983, p. 413), and there is documentation of Texas kangaroo rats being hit by cars on roads (Dalquest and Collier 1964, p. 146; Jones et al. 1988, p. 249; Martin 2002, p. 4). Therefore, we determined that paved and gravel roads have a negative impact on the Texas kangaroo rat because they may restrict movement, increase mortality, and fragment habitat. However, as discussed above, the overall effect of unpaved roads on the species is unknown because, while the roads lead to removal of native habitat, they also may provide substitute habitat in some settings.

Within the Texas kangaroo rat's range, major highways and urban areas are expected to impact the distribution of the species. The largest thoroughfare within the range is State highway 287, a four-lane divided highway, which bisects the entire northern portion of the species' range from east to west. Additional highways and the City of Wichita Falls also influence Texas kangaroo rat movement by presenting a complete or partial dispersal barrier. Within the 11-county historical range, human

population growth has increased minimally (by 3,000 people between 1997 and 2017) in comparison to other parts of Texas (TAMU 2020), and future growth of the human population within the Texas kangaroo rat's range is expected to be similarly minor through 2040 (Texas Department of Transportation 2015, pp. 4–5).

The Texas kangaroo rat's association with disturbance (natural and anthropogenic) is well established (Stangl et al. 1992, pp. 29–34; Goetze et al. 2007, pp. 18–19). Among sources of anthropogenic disturbance, oil and gas infrastructure is common throughout the range of the species. Texas produces the most crude oil and natural gas of any State in the nation. As of June 2, 2020, within the historical range 71,843 oil and natural gas well sites occurred across the 11 Texas counties (Railroad Commission of Texas 2020, unpaginated). The majority of all wells within the current range of the Texas kangaroo rat occur within Wichita and Wilbarger Counties. The presence of oil and gas infrastructure (i.e., oil pad access roads, stacks of drill pipe segments, margins of established/maintained well pads, etc.) has an unclear impact on the species, but it may provide opportunistic burrowing sites for Texas kangaroo rats (Martin 2002, p. 16; Nelson et al. 2013, p. 8; Stuhler et al. 2019, p. 139). Oil and gas extraction also often involves creating new unpaved roads for access, which could benefit the species or further remove native habitat, as discussed above. The full extent of the influence of oil and gas on the Texas kangaroo rat, including potential benefits or detriments, has not been studied. The loss of naturally occurring disturbances (i.e., bison grazing, prairie dog towns, wildfire) may make anthropogenic features and disturbance more important in creating or maintaining bare ground and short-statured vegetation preferred by the Texas kangaroo rat, at least opportunistically or as a remnant source of habitat.

Climate Change

Climate models developed by the Intergovernmental Panel on Climate Change (IPCC) have projected a worldwide overall warming trend towards the end of the 21st century (IPCC 2007, p. 747). Based on simulations of several global climate models, Seager et al. (2007, p. 1181) showed that southwestern North America, which encompasses the range of the Texas kangaroo rat, is projected to become drier and that the transition to a more arid climate is already underway. The main scientific measure of climate change, the earth's average annual temperature (the surface air temperature above land and oceans), shows clear evidence of the change since modern recordkeeping began in 1880. Since that time, the average annual temperature has varied (i.e., each year is not necessarily warmer than the last), and, despite the variability, a clear warming trend is evident (see *https://www.ncdc.noaa.gov/cag/time-series/global*; IPCC 2014, p. 2).

Downscaled global climate models predict changes in temperature and precipitation across subregions of Texas (Jiang and Yang 2012). Evaluating these subregions under the IPCC's emissions scenarios (IPCC 2000, pp. 177–182), the downscaled models predict that annual temperatures in the Central subregion, which includes the Texas kangaroo rat's range, will increase with trends ranging from an increase of approximately 4.3 ºF (2.4 ºC, lower emissions scenario) to 7.6 ºF (4.2 ºC, higher emissions scenario) (Jiang and Yang 2012, p. 235). Likewise, a continuing drying trend is predicted for four of the five subregions analyzed, including the Central subregion. The downscaled global climate models also illustrate a potential future shift in seasonal rainfall patterns in the Central subregion, where summer is projected to have more rainfall, while winter is projected to have less rainfall (Jiang and Yang 2012, p. 238).

One manifestation of projected warming trends is the greater number of days per year that a given region of Texas will experience temperatures exceeding 100 ºF (38 ºC). In the recent past, some regions of Texas reached temperatures above 100 ºF

approximately 10–20 days per year; however, climate models project more than 100 such 100 ºF days per year by the end of the century under a high greenhouse gas emissions scenario (Banner et al. 2010, p. 8).

Climate may have direct or indirect effects on species, and the effects may be positive, neutral, or negative, and may change over time depending on the species and other relevant considerations, such as interactions of climate with other variables. Examples of possible results include habitat fragmentation, alterations in key vegetation in response to temperature or other climate-related changes (e.g., expansion of invasive species), or changes in types or abundance of competing species, predators, or prey (Settele et al. 2014, pp. 274–275, 278–279). The life-history characteristics of many species are closely connected with climate conditions (e.g., thermal tolerances during certain stages of the life cycle). Accordingly, many climate scientists expect numerous species will shift their geographical distributions in response to a warming climate (e.g., McLaughlin et al. 2002, p. 6070). Populations occurring in fragmented habitats can be more vulnerable to effects of climate change and other threats, particularly those species with limited dispersal abilities (McLaughlin et al. 2002, p. 6074).

Historically, distributions of plants and animals have shifted with changes in regional and global temperatures. Studies continue to indicate that these changes will impact the distribution of plant and animal species as well as the composition of plant and animal communities. Projections of the distribution of vegetation across the State of Texas predicted that distributions and richness of particular taxa of mammals would be altered and fragmented in response to shifts in preferred habitats resulting from climate change (Cameron and Scheel 2001, p. 654). Rodents in general are expected to be more adaptable to changes in vegetation than other Texas mammals, whose ranges are expected to decrease (Cameron and Scheel 2001, p. 654). The impact of climate change in Texas is expected to be greatest under warmer, drier climatic scenarios, where rodent

geographic ranges are likely to shift to areas containing vegetation types different than those historically observed. The impact of climate change could be the most severe in western and southern Texas if the climate becomes warmer and drier because of the expansion of desert and shrub habitats (Cameron and Scheel 2001, p. 652), which will have direct implications for the future of the Texas kangaroo rat.

There is some evidence that hotter, drier years limit Texas kangaroo rat populations (Nelson et al. 2013, p. 10). Additionally, in a vegetation study of rodents in Texas, two climate circulation models (one projecting wetter and one projecting drier conditions than the current climate) were used to predict climate-vegetation associations and vegetation distribution changes over the coming decades as atmospheric carbon dioxide doubles from baseline levels (Cameron and Scheel 2001, p. 658), which is anticipated to happen after 2050 in the most pessimistic climate scenarios (Terando et al. 2020, p. 9). Under both scenarios, Texas kangaroo rat were projected to experience a decline in suitable habitat and a shift in distribution, though the severity depends on precipitation patterns, with the wetter conditions model resulting in a greater loss of suitable habitat. However, this future suitable habitat overlaps the existing geographic range in only 494 ac (200 ha; drier conditions) or 2,471 ac (1,000 ha; wetter) and is almost entirely composed of new vegetation associations that the Texas kangaroo rat does not currently use.

An increase in woody encroachment associated with climate change may also result in a contraction in available suitable Texas kangaroo rat habitat. Projected warming temperatures and dry conditions will likely have an influence on future shrubland dominance (Van Auken 2000, p. 206). In northwest Texas, the effect of climate change and fire suppression would result in a shrubland-dominated landscape (White et al. 2011, p. 541). As described above, encroachment of woody vegetation has deleterious effects to the use of habitat by Texas kangaroo rats. Therefore, the expected shift in vegetative

structure brought on by climate change resulting in woody species encroachment would limit the amount of suitable habitat available to the Texas kangaroo rat.

In the range of the Texas kangaroo rat within the Southwestern Tablelands and Central Great Plains regions, climate change is also expected to increase drought frequency and severity in the coming decades. One metric widely used for drought monitoring is the Palmer Drought Severity Index, which uses readily available temperature and precipitation data to estimate relative dryness and quantify past long-term drought. The Palmer Drought Severity Index can also be used to model future drought conditions (Cook et al. 2007, p. 103). These model projections consistently predict significantly drier conditions in the latter half of the 21st century (2050–2099) and suggest an exceptionally high risk of a multi-decadal megadrought occurring over the Central Plains and Southwest regions during the late 21st century (Cook et al. 2015, pp. 1–4).

To date, a limited number of observations inform our understanding of the impacts of drought on the Texas kangaroo rat. On one property, a substantial decline in the number of individuals was observed in 2011 (Nelson et al. 2013, p. 10), the worst single-year drought on record in Texas (Nielsen-Gammon 2012, entire). However, it is not known if the decline observed was caused directly by drought (e.g., by a lack of available water), indirectly (e.g., a change in vegetation and decline in food resources resulting from the drought), or by an unrelated or unknown factor. The 2011 drought and corresponding heat wave were largely attributed to anomalous sea surface temperatures related to La Niña conditions in the Pacific Ocean, rather than anthropogenic climate change, and are considered outliers (compared to conditions over the past 100 years) not consistent with regional trends (Hoerling et al. 2013, entire). Although the effects of the influence of prolonged drought on Texas kangaroo rats have not been well studied,

predicted intensified drought conditions may limit the Texas kangaroo rat in the coming decades.

In some instances, effects from one threat may increase effects of another threat, resulting in what is referred to as synergistic effects. Synergistic effects often include an increased susceptibility to predation (Moore and Townsend 1998, pp. 332–333), disease (Kiesecker and Blaustein 1995, pp. 11050–11051; Taylor et al. 1999, pp. 539–540), or parasites (Kiesecker 2002, pp. 9902–9903; Gendron et al. 2003, pp. 472–473). Synergistic interactions are possible between the effects of climate change and the effects of other potential threats, especially those that affect the composition and structure of the vegetation communities, such as energy development, livestock grazing, and woody vegetation expansion. Changes in temperature and precipitation resulting from climate change are likely to affect the composition and structure of the vegetation communities as well, which the Texas kangaroo rat is closely associated with, and many of these relationships are discussed in the previous sections. While it is difficult to project specifically how the climate, especially temperature and precipitation, will change and how the vegetation will be affected, the effects of climate change are expected to exacerbate the increase in woody vegetation and subsequent loss of appropriate habitat.

Other Potential Threats

Barn owls and diamondback rattlesnakes prey on Texas kangaroo rats (Stangl et al. 2005, p. 137, Bailey 1905, p. 149; Veech et al. 2018, p. 5); however, there is no documentation of predation pressure exerting a substantial effect on Texas kangaroo rat populations. Parasites may also threaten some rodent populations. However, a nematode first described from a Texas kangaroo rat specimen appears to have had no deleterious effects on the individual or population from which it came (Pfaffenberger and Best 1989, entire).

The range of the Texas kangaroo rat overlaps areas with adequate wind resources necessary for generating energy. There are no published records of Texas kangaroo rats using or avoiding habitat associated with wind facilities. Similarly, solar energy development is an emerging industry in Texas that may also have a substantial impact on the landscape within the range of the Texas kangaroo rat. There are no published records of Texas kangaroo rats using or avoiding the land where solar facilities currently exist. Greater detailed analyses of these potential threats can be reviewed in the SSA report (Service 2021, pp. 37–40).

Conservation Efforts and Regulatory Mechanisms

The Texas kangaroo rat was listed as threatened by the State of Texas (Texas Administrative Code section 65.175) in 1977. A State-threatened designation makes it unlawful to collect, kill, or take the species without a permit from the Texas Parks and Wildlife Department. The designation protects the Texas kangaroo rat by increasing its restitution value, meaning that if a person violates the law, the fine is higher than for other nongame species in Texas.

Coordinated conservation of the Texas kangaroo rat in the State has been ongoing for several years. The Natural Resources Conservation Service encourages private landowners to implement compatible conservation management practices that may benefit the Texas kangaroo rat through habitat improvements. In coordination with the Fort Worth Zoo (TX), research on Texas kangaroo rat husbandry has been ongoing since 2018. The results from this study are intended to inform a potential captive propagation effort that could lead to the release of captive-reared individuals into the wild. If successful, captive propagation could be a useful conservation tool to augment Texas kangaroo rat populations or reintroduce the species to historical localities in the future.

Lastly, we have collaborated with the Texas Parks and Wildlife Department and private landowners to develop a CCAA for the species on non-Federal lands. The CCAA

was completed May 16, 2022, and is available to non-Federal landowners within the species' historical range in Texas (Service 2022, unpaginated). The purpose of the agreement is to maintain, enhance, and establish self-sustaining populations of Texas kangaroo rats in the wild through the implementation of specific conservation measures. Landowners that choose to enroll in the CCAA enter into a cooperative agreement via a wildlife management plan or other approved conservation plan with the Texas Parks and Wildlife Department to undertake conservation measures for the benefit of the Texas kangaroo rat. The key conservation measures in the CCAA are designed to increase the resiliency of Texas kangaroo rat populations in occupied and historical areas by maintaining or improving the habitat through management, restoration, or enhancement; by increasing the connectivity of habitat; and by establishing new populations in areas where they were previously extirpated through translocation of wild or captive-reared individuals in the future.

Summary

Our analysis of the factors influencing the Texas kangaroo rat's viability revealed several threats that pose a risk to the species' current and future viability: loss of ecosystem functions maintained by the bison, prairie dog, and fire complex, encroachment of woody vegetation, conversion of native rangeland to cropland and CRP land, construction of roads (in particular, paved and gravel roads), urbanization, and influences of climate change. Conversely, well-managed livestock grazing can be compatible with management of Texas kangaroo rat habitat. Also, the influences of road construction, oil and gas extraction, wind energy, and solar energy development on the Texas kangaroo rat's viability are not fully understood. Efforts to conserve the species are in the planning stages and are expected to benefit the species in future years.

Species Condition

To evaluate the current condition of the Texas kangaroo rat, we considered the resiliency of known populations or groups, the redundancy of populations or groups, and the ecological or genetic representation within the species across its range. We assessed resiliency of the four analysis units using the five metrics (i.e., standardized survey data, habitat availability, road edge habitat, cropland percentage, and woody cover percentage; see **Species Needs**, above) and assigned a rank of good, fair, or poor for each metric based on evidence from documented studies, available unpublished information, and expert opinion. Weighting was placed on each metric prior to calculating a final resiliency score for each of the analysis units. Habitat availability and woody cover percentage were weighted more heavily because there is strong evidence that soils and land cover type are associated with species presence and that dense woody cover has a negative effect. Road edge habitat and cropland percentage were given a lower weight because there is less certainty about the influences these factors have on the species' resiliency. Based on the total of weighted metric scores, a condition category of high, moderate, low, or minimal was assigned to each analysis unit to represent its current resiliency. The results of our resiliency analysis are presented in table 1.

TABLE 1—SUMMARY OF CURRENT RESILIENCY OF TEXAS KANGAROO RAT ANALYSIS UNITS

[Each metric condition rank of good, fair, and poor refers to the score evaluated in each unit based on either a positive or negative influence of the metric (e.g., "good" condition for cropland represents a unit with minimal cropland impact).]

Analysis Unit	Survey Data	Habitat Availability	Road Edge Habitat	Cropland Percentage	Woody Cover Percentage	Overall Resiliency
East	Poor	Fair	Poor	Poor	Good	Moderate
Central	Poor	Poor	Poor	Poor	Poor	Low
North	Poor	Fair	Good	Fair	Poor	Low
West	Poor	Fair	Fair	Good	Poor	Low

The analysis results indicate the Central, North, and West analysis units have low resiliency. The East Unit has moderate resiliency. None of the units have a resiliency that ranked as minimal or high.

The overall resiliency scores were largely driven by low detections during surveys and the amount of woody cover in all units except the East Unit. All units scored poor in the standardized survey data metric, meaning that fewer than three Texas kangaroo rats were detected per 16 kilometers (10 miles) of unpaved road in the unit. It is important to note that species detection can be highly variable from year to year and there is no population trend information or consistency of survey methods over time. Additionally, there are no published accounts of a population level that would be considered stable. Our analysis estimated the ranking of good in the standardized survey data metric based on the largest published record of the species collected across a single year and apportioned the other categories equally. A ranking of poor in the standardized survey data metric is an indication that the species is not currently observed in the analysis unit in the same abundance compared to the height of detectability in the past. Due to the difficulty in detecting the species and the lack of published information on standard population numbers, the standardized survey metric ranking should not be interpreted to represent the number of individuals needed for persistence, but as a contributing factor to the overall resiliency score of a unit.

To evaluate representation in the current condition of the Texas kangaroo rat, we considered both genetic information and the geographic distribution of populations. The ecological diversity of the Texas kangaroo rat is represented by two ecoregions: the Southwestern Tablelands (West Unit) and the Central Great Plains (East, Central, and North Units). The two ecoregions generally correspond to an east-west environmental gradient. The species exhibits adaptive potential by occupying these two different habitat types that vary in terms of precipitation, soils, topography, and vegetation.

Genetic structuring within the Texas kangaroo rat population was analyzed in two recent studies (Pfau et al. 2019; Stuhler et al. 2019) in which the researchers found spatial separation in genetic variation occurring along an east-west gradient. Genetic differences between the two sides of the range may be substantial enough to indicate a metapopulation dynamic, with at least two subpopulations (Stuhler et al. 2019, pp. 105–107). However, the boundaries of the genetic subpopulations are uncertain and differ between the two studies. The North and West Units are genetically similar, and the East Unit differs, but the Central Unit occurs in an intermediate zone (Pfau et al. 2019, pp. 1177–1178; Stuhler et al. 2019, pp. 105–107). It is unknown if the differences correspond to an environmental gradient, geographic or anthropogenic barrier, or some combination of factors, but they do not match the geographic boundary between ecoregions described above. Samples from the center of the range are limited, making it difficult to identify whether the genetic differences are true subpopulations or reduced gene flow due to distance across a continuous population (Pfau 2019, pers. comm.; Stuhler et al. 2019, p. 107). There is also evidence that a historical loss of genetic diversity or population bottleneck involving the entire species occurred prior to the establishment of the current distribution (Pfau et al. 2019, p. 1176). However, despite contemporary changes in species' distribution, there does not seem to be a substantial loss of genetic diversity within the past 30 years (Stuhler et al. 2019, p. 105).

Redundancy refers to the species' ability to withstand catastrophic events. Because the Texas kangaroo rat is a narrow-ranging endemic, any catastrophic event that may happen has the potential to affect the entire range of the species, although no specific catastrophic events acting on the species in the past or likely to act on the species in the future were identified in our analysis. For the purposes of our analysis, the species' redundancy was measured by assessing the number and average resiliency of the analysis units within each ecoregion because the number and the distribution of populations are

important to mitigate risk and reduce the potential effects of catastrophic events should they occur. Average resiliency scores were calculated by assigning numerical values to the resiliency metric conditions (see Table 1) for each analysis unit and weighting the values to reflect the relative importance of having moderately or highly resilient populations (or analysis units) within the ecoregion, which would indicate that the species is likely to withstand stochastic events (see Service 2021, pp. 63–65). The results of our redundancy analysis are presented in table 2.

TABLE 2—SUMMARY OF CURRENT REDUNDANCY RANKINGS OF TEXAS KANGAROO RAT ECOREGIONS

Redundancy Ecoregions	Analysis Units Included	Average Unit Resiliency	Redundancy Ranking
Central Great Plains	East, Central, North	1.5	Moderate
Southwestern Tablelands	West	1.5	Low

Populations with adequate resiliency are needed to withstand the potential effects of catastrophic events due to the inherently limited distribution of the species. The Central Great Plains ecoregion contains three extant analysis units (i.e., North, Central, and East). While the number of units in the Central Great Plains is considered adequate, the average resiliency of those analysis units is low, and the ecoregion is therefore considered to have a moderate redundancy. The Southwestern Tablelands ecoregion contains just one analysis unit (i.e., West), which has low resiliency. Therefore, this region is considered to have low redundancy. To maintain viability, the species' representation should include at least one moderate to high resilient unit within each ecoregion. Under current conditions, representation is lacking in the Southwestern Tablelands ecoregion, which maintains a single unit that ranks low, and is slightly higher in the Central Great Plains ecoregion, which has three units (two that rank low, one that ranks moderate). At the species level, the current range of the Texas kangaroo rat is

spread across two ecoregions encompassing an area of approximately 1.4 million ac (0.6 million ha). Based on our current knowledge, this represents a substantial reduction from the estimated maximum historical distribution that covered approximately 3.4 million ac (1.4 million ha).

As part of the SSA, we also developed four future condition scenarios reasonably expected to occur over the next 25 years that capture the range of uncertainties regarding future threats and the projected responses by the Texas kangaroo rat. Together, these scenarios represent the range of plausible outcomes over that timeframe. Using the same framework as our analysis under current conditions, we evaluated the five metrics (i.e., standardized survey data, habitat availability, road edge habitat, cropland percentage, and woody cover percentage) used to assess resiliency for each analysis unit and developed criteria in which each metric could be projected for the future condition. Because we determined that the current condition of the Texas kangaroo rat is consistent with an endangered species (see **Determination of Texas Kangaroo Rat Status**, below), we are not presenting the results of the future scenarios in this proposed rule. Please refer to the SSA report (Service 2021) for the full analysis of future scenarios.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. The best available science indicates that there are strong synergistic and cumulative interactions among the factors influencing Texas kangaroo rat viability. For example, the reduction of ecosystem function from the losses of bison, prairie dogs, and periodic fire has synergistically led to increasing shrub canopy, resulting in habitat loss and causing Texas kangaroo rat populations to exist in increasingly small areas. Development and conversion of native rangeland to cropland have also led to increased habitat loss and fragmentation. Cumulatively, these factors affect the species' viability because there is less connectivity

among populations, diminishing the species' ability to repopulate areas following extirpation. To assess the current and future condition of the species, we evaluate the effects of all the relevant factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative-effects analysis.

Determination of Texas Kangaroo Rat Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an "endangered species" as a species in danger of extinction throughout all or a significant portion of its range and a "threatened species" as a species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of an endangered species or a threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

After evaluating threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we find that the viability of the species is currently at risk. Our analysis revealed several threats that have caused the Texas kangaroo rat's range to become greatly reduced, and much of its remaining habitat is now unsuitable. The most important factors affecting the species' current status and trend are

the destruction and modification of its habitat (Factors A and E) and the effects of climate change on its habitat (Factor E).

The primary driver of the status of the Texas kangaroo rat has been the loss and degradation of suitable grassland and rangeland habitats caused by loss of ecosystem functions, conversion to croplands, and development. The historical loss of the bison, prairie dog, and fire complex that occurred in the late 1800s to early 1900s resulted in loss of the natural disturbance regime essential for maintaining habitat suitability. Texas kangaroo rats require a mosaic of short-statured vegetation interspersed with areas of bare ground and minimal woody cover. Without the complex interactions maintaining that mosaic of habitat and dynamic prairie ecosystem, vegetational succession occurred in areas across the Great Plains region. In the absence of the natural disturbance regime, woody vegetation invaded grasslands, eventually converting some to shrublands or woodlands uninhabitable by Texas kangaroo rats. Native woody plants such as mesquite continue to encroach into the remaining grasslands and are currently estimated to increase at a rate of 2.3 percent per year. Warming temperatures and dry conditions related to climate change are expected to increase the rate of woody plant encroachment, further limiting the amount of suitable habitat available to Texas kangaroo rats into the future.

Another source of historical habitat loss occurred in the early and mid-1900s when many native grasslands and rangelands were converted to croplands. The impacts of land conversion to cropland, which often involved plowing and disking, were initially very high and included direct loss of occupied Texas kangaroo rat habitat, destruction of burrows, and potential mortality of individuals present at the time. The longer term impacts of rangeland conversion have been loss of native foraging sources and increased habitat fragmentation. Despite this situation, Texas kangaroo rats likely still use portions of cropland to opportunistically forage and travel along field edges where regular mowing maintains the short-statured vegetation associated with their habitat

requirements. The CRP program, which was introduced in 1985, results in tall, dense vegetation on enrolled lands and typically does not provide the short-statured vegetation and bare ground suitable for Texas kangaroo rats. Additionally, CRP lands do not typically maintain the edge characteristics of active or fallow croplands that have the potential to provide marginal habitat for the species. Conversion of additional grasslands and rangelands to croplands are not expected to continue within the range of the species, but conversion of cropland to CRP has the potential to further reduce and fragment Texas kangaroo rat habitat in the future.

Development of grasslands and rangelands to roads, highways, and urban areas has had significant impacts on connectivity across the range of the species. Texas kangaroo rats use unpaved roads and the narrow strip of adjacent land as nontraditional habitat and travel corridors. In comparison, paved and gravel roads have a negative effect on the species because they restrict movement, increase mortality, and fragment habitat. Highways, such as State highway 287, have bisected the species' range, restricting dispersal and genetic exchange between populations. Urban development in some areas has further limited movement. Decreased habitat connectivity reduces the Texas kangaroo rat's viability by limiting gene flow and the ability of the species to repopulate suitable sites where they were previously extirpated.

Because of these threats acting upon the Texas kangaroo rat, the species' range has decreased to approximately 41 percent of its estimated historical distribution. It currently occurs in five counties (Childress, Cottle, Hardeman, Wichita, and Wilbarger), and it has been extirpated from seven counties in north-central Texas (Archer, Baylor, Clay, Foard, Montague, Motley, and Wilbarger) and two counties in southern Oklahoma (Comanche and Cotton). The majority of Texas kangaroo rats currently exist in four areas that are significantly isolated from each other. The results of our analysis showed that three of the four populations that occupy these areas currently have low resiliency,

indicating a high likelihood that environmental and demographic stochasticity would cause them to become extirpated. The fourth population has moderate resiliency. The Texas kangaroo rat's current range is represented by the Central Great Plains and the Southwestern Tablelands ecoregions, which are the same ecoregions where it existed historically. Three populations are located in the Central Great Plains, indicating moderate redundancy, and one population occurs in the Southwestern Tablelands, indicating low redundancy. Because the Texas kangaroo rat is a narrow-ranging endemic, catastrophic events are likely to affect the entire range of the species. Thus, low to moderate redundancy conditions within representative units suggest a higher likelihood that a single catastrophic event, should one occur, could cause the extinction of the Texas kangaroo rat. Under current conditions, representation is lacking in the Southwestern Tablelands ecoregion, which maintains a single unit that ranks low, and is slightly higher in the Central Great Plains ecoregion, which has three units (two that rank low, one that ranks moderate).

In summary, the Texas kangaroo rat is currently experiencing significant impacts due to loss of ecosystem functions maintained by the historical interactions of bison, prairie dog, and wildfire; encroachment of woody vegetation, which is exacerbated by climate change; loss of habitat due to conversion of native rangeland to cropland; and loss of habitat connectivity due to urban development and construction of roads throughout its very limited range. Texas kangaroo rats currently occur in a limited portion of north-central Texas, and nearly all populations of the species are in low-resiliency condition with reduced redundancy. Due to impacts of threats discussed above, we find the species is currently at a high risk of extinction. Thus, after assessing the best available information, we determine that the Texas kangaroo rat is in danger of extinction throughout all of its range. We do not find that the species meets the Act's definition of a

threatened species because the species has already shown low levels in current resiliency, redundancy, and representation due to the threats discussed above.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. We have determined that the Texas kangaroo rat is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portion of its range. Because the Texas kangaroo rat warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Center for Biological Diversity* v. *Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020), (*Everson*) which vacated the provision of the Final Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of "Endangered Species" and "Threatened Species" (79 FR 37578, July 1, 2014) providing that if the Service determines that a species is threatened throughout all of its range, the Service will not analyze whether the species is endangered in a significant portion of its range.

Determination of Status

Our review of the best available scientific and commercial information indicates that the Texas kangaroo rat meets the definition of an endangered species. Therefore, we propose to list the Texas kangaroo rat as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and

conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies, including the Service, and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) may be established to develop and implement recovery plans. The recovery planning process involves the identification of actions that are necessary to halt and reverse the species' decline by addressing the threats to its survival and recovery. The recovery plan identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened ("downlisting") or removal from protected status ("delisting"), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery outline,

draft recovery plan, final recovery plan, and any revisions will be available on our website as they are completed (*http://www.fws.gov/endangered*), or from our Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the State of Texas would be eligible for Federal funds to implement management actions that promote the protection or recovery of the Texas kangaroo rat. Information on our grant programs that are available to aid species recovery can be found at: *https://www.fws.gov/service/financial-assistance*.

Although the Texas kangaroo rat is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7 of the Act is titled Interagency Cooperation and mandates all Federal action agencies to use their existing authorities to further the conservation purposes of the Act and to ensure that their actions are not likely to jeopardize the continued existence of

listed species or adversely modify critical habitat. Regulations implementing section 7 are codified at 50 CFR part 402.

Section 7(a)(2) states that each Federal action agency shall, in consultation with the Secretary, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Each Federal agency shall review its action at the earliest possible time to determine whether it may affect listed species or critical habitat. If a determination is made that the action may affect listed species or critical habitat, formal consultation is required (50 CFR 402.14(a)), unless the Service concurs in writing that the action is not likely to adversely affect listed species or critical habitat. At the end of a formal consultation, the Service issues a biological opinion, containing its determination of whether the Federal action is likely to result in jeopardy or adverse modification.

In contrast, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action which *is likely* to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. Although the conference procedures are required only when an action is likely to result in jeopardy or adverse modification, action agencies may voluntarily confer with the Service on actions that may affect species proposed for listing or critical habitat proposed to be designated. In the event that the subject species is listed or the relevant critical habitat is designated, a conference opinion may be adopted as a biological opinion and serve as compliance with section 7(a)(2).

Examples of discretionary actions for the Texas kangaroo rate that may be subject to conference and consultation procedures under section 7 are land management or other landscape-altering activities on Federal lands as well as actions on State, Tribal, local, or

private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 et seq.) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation. Examples of Federal agency actions that may require consultation for the Texas kangaroo rat could include transportation projects funded by the Federal Highway Administration and authorization by the Federal Energy Regulatory Commission for a company to install a gas or oil pipeline. Federal agencies should coordinate with the local Service Field Office (see **FOR FURTHER INFORMATION CONTACT**) with any specific questions on section 7 consultation and conference requirements.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit or to cause to be committed any of the following: (1) import endangered wildlife to, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) endangered wildlife within the United States or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. Certain exceptions to these

prohibitions apply to employees or agents of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits for endangered wildlife are codified at 50 CFR 17.22. With regard to endangered wildlife, a permit may be issued: for scientific purposes, for enhancing the propagation or survival of the species, or for take incidental to otherwise lawful activities. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is the policy of the Service, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify, to the extent known at the time a species is listed, specific activities that will not be considered likely to result in violation of section 9 of the Act. To the extent possible, activities that will be considered likely to result in violation will also be identified in as specific a manner as possible. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of the species proposed for listing.

As discussed above, certain activities that are prohibited under section 9 may be permitted under section 10 of the Act. In addition, to the extent currently known, the following activities will not be considered likely to result in violation of section 9 of the Act:

- normal residential landscaping activities on non-Federal lands;
- recreational use with minimal ground disturbance; or
- maintenance (e.g., resurfacing, repair, mowing) of existing paved roads.

This list is intended to be illustrative and not exhaustive; additional activities that will not be considered likely to result in violation of section 9 of the Act may be identified during coordination with the local field office, and in some instances (e.g., with new

information), the Service may conclude that one or more activities identified here will be considered likely to result in violation of section 9.

To the extent currently known, the following is a list of examples of activities that will be considered likely to result in violation of section 9 of the Act in addition to what is already clear from the descriptions of the prohibitions found at 50 CFR 17.21:

- unauthorized handling or collecting of Texas kangaroo rats;
- unauthorized modification, removal, or destruction of native grassland/rangeland habitat in which the Texas kangaroo rat is known to occur;
- introduction of nonnative species that compete with or prey upon Texas kangaroo rats or that carry pathogens known to or suspected to affect Texas kangaroo rats—for example, the introduction of competing nonnative rodents or nonnative predators to the State of Texas; or
- unauthorized modification of the soil profiles or the vegetation components on sites known to be occupied by Texas kangaroo rats.

This list is intended to be illustrative and not exhaustive; additional activities that will be considered likely to result in violation of section 9 of the Act may be identified during coordination with the local field office, and in some instances (e.g., with new or site-specific information), the Service may conclude that one or more activities identified here will not be considered likely to result in violation of section 9. Questions regarding whether specific activities would constitute violation of section 9 of the Act should be directed to the Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

II. Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely, by vagrant individuals).

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that each Federal action agency ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect

land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation also does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Rather, designation requires that, where a landowner requests Federal agency funding or authorization for an action that may affect an area designated as critical habitat, the Federal agency consult with the Service under section 7(a)(2) of the Act. If the action may affect the listed species itself (such as for occupied critical habitat), the Federal agency would have already been required to consult with the Service even absent the designation because of the requirement to ensure that the action is not likely to jeopardize the continued existence of the species. Even if the Service were to conclude after consultation that the proposed activity is likely to result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement "reasonable and prudent alternatives" to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat).

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at

the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information from the SSA report and information developed during the listing process for the species. Additional information sources may include any generalized conservation strategy, criteria, or outline that may have been developed for the species; the recovery plan for the species; articles in peer-reviewed journals; conservation plans developed by States and counties; scientific status surveys and studies; biological assessments; other unpublished materials; or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and

outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the prohibitions found in section 9 of the Act. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of the species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of those planning efforts calls for a different outcome.

Physical or Biological Features Essential to the Conservation of the Species

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. The regulations at 50 CFR 424.02 define "physical or biological features essential to the conservation of the species" as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For

example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkaline soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species.

In considering whether features are essential to the conservation of the species, we may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance. These characteristics are described below for the Texas kangaroo rat:

(1) Appropriate soils to support burrowing behaviors: Texas kangaroo rats dig subterranean burrow systems in predominantly loose, loam/clay-loam soils, which are used for shelter, reproduction, and food storage.

(2) Short-statured prairie vegetation: Texas kangaroo rats generally prefer shortgrass or mixed-grass prairie with forbs. Woody canopy cover should be sparse (less than 50 percent). Maintaining this kind of habitat requires a disturbance regime to promote early successional grassland habitat, which could be caused by many sources including grazing, fire, mesquite removal, etc.

(3) Home range or territory features: Texas kangaroo rats require each of the following within their home ranges to support breeding: a proportional mixture of short-statured vegetation and bare ground (at the microscale) and loose soil; structure conducive to burrowing; and food availability. In the areas surrounding their burrows, individuals require the appropriate mixture of grasses, forbs, and bare ground to facilitate normal behaviors and movement. These qualities must exist at the microscale because they are important factors when individuals choose their territories. Loose soils are necessary for dust-bathing activities (to ameliorate parasites), scent marking (for territory delineation/sexual receptivity), and tunneling (for burrow construction). Burrows typically require some form of topographic relief in areas not prone to flooding. To provide structure for burrow entrance construction, Texas kangaroo rats have been known to opportunistically use shrubs; prairie mounds (natural, elevated, and relatively bare areas possibly uplifted by clay soils swelling in cracks); manmade berms that occur due to road, fence, and oilfield construction; and old (>30 years), unburned brush piles where wood has decayed leaving a mound of loose friable soil. Their territories must also include sources of food with adequate seed-producing grasses and forbs. However, specific food preferences are unknown, and the Texas kangaroo rat is thought to forage opportunistically and store seeds as resources allow.

Summary of Essential Physical or Biological Features

We derive the specific physical or biological features essential to the conservation of Texas kangaroo rat from studies of the species' habitat, ecology, and life history as described below. Additional information can be found in the SSA report (Service 2021, entire; available on *https://www.regulations.gov* under Docket No. FWS-R2-ES-2021-0143). We have determined that the following physical or biological features are essential to the conservation of the Texas kangaroo rat:

(1) loose loam/clay-loam soils;

(2) shortgrass or mixed-grass prairie with forbs and less than 50 percent woody canopy cover;

(3) early successional grassland habitat often created and maintained by a disturbance regime (e.g., grazing, fire);

(4) proportional mixture of short-statured vegetation (i.e., herbaceous plant species observed at a shortened height rather than their potential maximum height) and bare ground (i.e., at microscale);

(5) structure that provides uplift for burrows (e.g., prairie mound, shrub, manmade berm) in areas not prone to flooding; and

(6) habitat connectivity that supports movement and dispersal of Texas kangaroo rats (e.g., open spaces that lack barriers such as large paved roads or dense trees and shrubs).

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection. The features essential to the conservation of the Texas kangaroo rat may require special management considerations or protection to reduce the following threats: (1) Conversion of existing natural habitat to cropland; (2) urbanization of the landscape, including (but not limited to) development of roads and highways; (3) encroachment of woody vegetation due to changes in land use as well as climate change, resulting in the degradation of habitat; (4) negative impacts of CRP land; and (5) the potential effects of energy development.

Special management considerations or protection may be required within critical habitat areas to address these threats. Management activities that could ameliorate these threats include, but are not limited to, protecting grassland and rangeland habitats and

maintaining the short-statured vegetation; protecting and maintaining corridors used by Texas kangaroo rats to travel between sites; proactively implementing controlled burns and other forms of habitat management, such as cattle grazing, where appropriate, to support long-term habitat suitability; and minimizing the likelihood that energy development projects will impact the quality or quantity of suitable habitat.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat. We are not currently proposing to designate any areas outside the geographical area occupied by the species because we have not identified any unoccupied areas that meet the definition of critical habitat, and we have determined that the occupied areas are sufficient to conserve the species.

We anticipate that recovery will require maintaining and, where necessary, improving habitat and habitat connectivity to ensure the long-term viability of the Texas kangaroo rat. We have determined that the areas containing one or more of the essential physical or biological features and occupied by the Texas kangaroo rat would maintain the species' resiliency, redundancy, and representation and are sufficient for conservation of the species. Therefore, we are not currently proposing to designate any areas outside the geographical area occupied by the species.

In summary, for areas within the geographical area occupied by the species at the time of listing, we delineated critical habitat unit boundaries using the following criteria:

Evaluate suitability of habitat within the geographical area occupied at the time of listing and delineate those areas that contain some or all of the physical or biological features necessary to support life-history functions essential to the conservation of the species. Units are proposed for designation based on one or more of the physical or biological features being present to support the Texas kangaroo rat's life-history processes. All identified physical or biological features necessary to support the species' life history likely occur in some areas of each unit.

To determine the suitability of the habitat, we referred to a habitat model specific to the Texas kangaroo rat that identifies where on the landscape the necessary loam/clay-loam soils overlap with appropriate grassland and rangeland habitat types (Ott et al. 2019). We then removed patches of habitat that are likely too small to support the life cycle of a single individual (i.e., less than 11.5 ha [28.5 ac]). We also removed areas identified in Foard County, which is currently unoccupied (i.e., the species has not been detected there in 40 years). To delineate critical habitat, we grouped the resulting habitat patches into six units separated by likely dispersal barriers (e.g., rivers, large highways, and urban areas). All the patches of habitat within each unit are connected by possible travel corridors that facilitate movement of individuals, a feature which is essential for the long-term viability of the species.

When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features necessary for the Texas kangaroo rat. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as

proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We propose to designate as critical habitat lands that we have determined are occupied at the time of listing (i.e., currently occupied) and that contain one or more of the physical or biological features that are essential to support life-history processes of the species. Units are proposed for designation based on one or more of the physical or biological features being present to support the Texas kangaroo rat's life-history processes. All units likely contain all of the identified physical or biological features and support multiple life-history processes.

The proposed critical habitat designation is defined by the maps, as modified by any accompanying regulatory text, presented at the end of this document under **Proposed Regulation Promulgation**. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on *https://www.regulations.gov* at Docket No. FWS-R2-ES-2021-0143 and on our internet site *https://www.fws.gov/office/arlington-ecological-services*.

Proposed Critical Habitat Designation

We are proposing to designate approximately 597,069 ac (241,625 ha) in six units as critical habitat for the Texas kangaroo rat. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for the Texas kangaroo rat. The six areas we propose as critical habitat are:

(1) North of U.S. 287 near the cities of Childress and Quanah (Childress, Hardeman, and Wilbarger Counties),

(2) South of U.S. 287 near the cities of Childress and Quanah (Childress, Cottle, Hardeman, and Wilbarger Counties),

(3) North of U.S. 70 near the city of Paducah (Cottle County),

(4) South of U.S. 70 near the city of Paducah (Cottle County),

(5) North of U.S. 287 near the cities of Electra and Vernon (Wilbarger and Wichita Counties), and

(6) South of U.S. 287 near the cities of Electra and Vernon (Wilbarger and Wichita Counties).

Table 3 shows the proposed critical habitat units and the approximate area of each unit. All of these units are currently occupied by the species.

TABLE 3—PROPOSED CRITICAL HABITAT UNITS FOR TEXAS KANGAROO RAT
[AREA ESTIMATES REFLECT ALL LAND WITHIN CRITICAL HABITAT UNIT BOUNDARIES.]

Critical Habitat Unit	Land Ownership by Type	Size of Unit in Ac (Ha)	Occupied?
1. North of U.S. 287 near the cities of Childress and Quanah	Private	170,078 (68,828)	Yes
2. South of U.S. 287 near the cities of Childress and Quanah	Private	188,211 (76,166)	Yes
3. North of U.S. 70 near the city of Paducah	Private	17,035 (6,894)	Yes
4. South of U.S. 70 near the city of Paducah	Private	26,727 (10,816)	Yes
5. North of U.S. 287 near the cities of Electra and Vernon	Private	84,004 (33,995)	Yes
6. South of U.S. 287 near the cities of Electra and Vernon	Private	111,014 (44,926)	Yes
Total Area		597,069 (241,625)	

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Texas kangaroo rat, below.

Unit 1: North of U.S. 287 (Childress, Hardeman, and Wilbarger Counties)

Unit 1 consists of 170,078 ac (68,828 ha) in private ownership and management in portions of Childress, Hardeman, and Wilbarger Counties, Texas. It extends along the northern side of U.S. highway 287, which is considered a likely barrier for dispersal, and around the edges of the towns of Childress and Quanah. The Texas kangaroo rat occupies the entire unit, and the unit contains all of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required in Unit 1 to address a variety of threats. Ongoing activities in this unit include land cultivation for agriculture, livestock production, oil and gas exploration and production, and lands potentially enrolled in CRP (based on county-level data). Special management focused on infrastructure and energy development, activities involving site preparation that result in ground disturbance, conversion of rangeland to other uses (agricultural, urban/residential development), grazing management that maintains a mosaic of short-statured vegetation and areas of bare ground, and maintenance of unpaved roads will benefit habitat for the species in this unit.

Unit 2: South of U.S. 287 (Childress, Cottle, Hardeman, and Wilbarger Counties)

Unit 2 consists of 188,211 ac (76,166 ha) in private ownership and management in portions of Childress, Cottle, Hardeman, and Wilbarger Counties, Texas. It extends along the southern side of U.S. highway 287 and around the edges of the towns of Childress and Quanah. The Texas kangaroo rat occupies the entire unit, and the unit contains all of the physical or biological features essential to the conservation of the species.

The ongoing activities in Unit 2 are the same as those described in Unit 1; therefore, the special management considerations that may be required are the same.

Unit 3: North of U.S. 70 (Cottle County)

Unit 3 consists of 17,035 ac (6,894 ha) in private ownership and management in portions of Cottle County, Texas. It extends along the northern side of U.S. highway 70, which is considered a likely barrier for species dispersal, and around the edges of the town of Paducah. The Texas kangaroo rat occupies the entire unit, and the unit contains all of the physical or biological features essential to the conservation of the species.

The ongoing activities in Unit 3 are the same as those described in Unit 1; therefore, the special management considerations that may be required are the same.

Unit 4: South of U.S. 70 (Cottle County)

Unit 4 consists of 26,727 ac (10,816 ha) in private ownership and management in portions of Cottle County, Texas. It extends along the southern side of U.S. highway 70 and around the edges of the town of Paducah. The Texas kangaroo rat occupies the entire unit, and the unit contains all of the physical or biological features essential to the conservation of the species.

The ongoing activities in Unit 4 are the same as those described in Unit 1; therefore, the special management considerations that may be required are the same.

Unit 5: North of U.S. 287 (Wilbarger and Wichita Counties)

Unit 5 consists of 84,004 ac (33,995 ha) in private ownership and management in portions of Wilbarger and Wichita Counties, Texas. It extends along the northern side of U.S. highway 287 and around the edges of the town of Electra. The Texas kangaroo rat occupies the entire unit, and the unit contains all of the physical or biological features essential to the conservation of the species.

The ongoing activities in Unit 5 are the same as those described in Unit 1; therefore, the special management considerations that may be required are the same.

Unit 6: South of U.S. 287 (Wilbarger and Wichita Counties)

Unit 6 consists of 111,014 ac (44,926 ha) in private ownership and management in portions of Wilbarger and Wichita Counties, Texas. It extends along the southern side

of U.S. highway 287 and around the edges of the town of Electra. The Texas kangaroo rat occupies the entire unit, and the unit contains all of the physical or biological features essential to the conservation of the species.

The ongoing activities in Unit 6 are the same as those described in Unit 1; therefore, the special management considerations that may be required are the same.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action that is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

We published a final rule revising the definition of destruction or adverse modification on August 27, 2019 (84 FR 44976). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

Compliance with the requirements of section 7(a)(2) is documented through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define "reasonable and prudent alternatives" (at 50 CFR 402.02) as alternative actions identified during formal consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Service Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 set forth requirements for Federal agencies to reinitiate formal consultation if any of the following four conditions occur: (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. The reinitiation requirement applies only to actions that remain subject to some

discretionary Federal involvement or control. As provided in 50 CFR 402.16, the requirement to reinitiate consultations for new species listings or critical habitat designation does not apply to certain agency actions (e.g., land management plans issued by the Bureau of Land Management in certain circumstances).

Application of the "Destruction or Adverse Modification" Standard

The key factor related to the destruction or adverse modification determination is whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may violate section 7(a)(2) of the Act by destroying or adversely modifying such habitat, or that may be affected by such designation.

Activities that we may, during a consultation under section 7(a)(2) of the Act, consider likely to destroy or adversely modify critical habitat include, but are not limited to, the following:

(1) Actions that would physically alter the surface or subsurface habitat so that it removes resources on which the Texas kangaroo rats depend. Such activities could include, but are not limited to, removal of substrate, conversion of unpaved roads to paved roads, activities involving site preparation that result in ground disturbance, and other activities that result in the physical destruction of habitat or the modification of habitat so that it is not suitable for the species. These activities could destroy food resources and existing burrows or render areas unsuitable for future burrowing and reproduction.

(2) Actions that would result in the conversion of rangeland habitat to other uses. Such activities could include, but are not limited to, construction of infrastructure (e.g., paved roads) and energy, agricultural, or urban/residential development. Infrastructure such as highways that create barriers on the landscape could decrease the connectivity between sites. All of these activities could result in the physical destruction of habitat or the modification of habitat so that it is not suitable for the species.

Exemptions

Application of Section 4(a)(3) of the Act

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that the Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DoD), or designated for its use, that are subject to an integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act Improvement Act of 1997 (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation. No DoD lands with a completed INRMP are within the proposed critical habitat designation.

Consideration of Impacts under Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. Exclusion decisions are governed by the regulations at 50 CFR 424.19 and the Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act (hereafter, the "2016 Policy"; 81 FR 7226, February 11, 2016), both of which were developed jointly with the National Marine

Fisheries Service (NMFS). We also refer to a 2008 Department of the Interior Solicitor's opinion entitled "The Secretary's Authority to Exclude Areas from a Critical Habitat Designation under Section 4(b)(2) of the Endangered Species Act" (M–37016).

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise discretion to exclude the area only if such exclusion would not result in the extinction of the species. In making the determination to exclude a particular area, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor. In our final rules, we explain any decision to exclude areas, as well as decisions not to exclude, to make clear the rational basis for our decision. We describe below the process that we use for taking into consideration each category of impacts and our analyses of the relevant impacts.

Consideration of Economic Impacts

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. To assess the probable economic impacts of a designation, we must first evaluate specific land uses or activities and projects that may occur in the area of the critical habitat. We then must evaluate the impacts that a specific critical habitat designation may have on restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the areas proposed. We then identify which conservation efforts may be the result of the species being listed under the Act versus those attributed solely to the designation of critical habitat for this particular species. The probable economic impact of a proposed critical habitat designation is analyzed by comparing scenarios both "with

critical habitat" and "without critical habitat."

The "without critical habitat" scenario represents the baseline for the analysis, which includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat (e.g., under the Federal listing as well as other Federal, State, and local regulations). Therefore, the baseline represents the costs of all efforts attributable to the listing of the species under the Act (i.e., conservation of the species and its habitat incurred regardless of whether critical habitat is designated). The "with critical habitat" scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts would not be expected without the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These are the costs we use when evaluating the benefits of inclusion and exclusion of particular areas from the final designation of critical habitat should we choose to conduct a discretionary 4(b)(2) exclusion analysis.

Executive Order (E.O.) 12866, as amended by E.O.s 13563 and 14094, directs Federal agencies to assess the costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consistent with these regulatory analysis requirements, our effects analysis under the Act may take into consideration impacts to both directly and indirectly affected entities, where practicable and reasonable. If sufficient data are available, we assess to the extent practicable the probable impacts to both directly and indirectly affected entities. Section 3(f) of E.O. 12866 identifies four criteria when a regulation is considered a "significant regulatory action" and requires additional analysis, review, and approval if met. The criterion relevant here is whether the designation of critical habitat may have an economic effect of $200 million or more in

any given year (section 3(f)(1)). Therefore, our consideration of economic impacts uses a screening analysis to assess whether a designation of critical habitat for the Texas kangaroo rat is likely to exceed the economically significant threshold.

For this particular designation, we developed an incremental effects memorandum (IEM) considering the probable incremental economic impacts that may result from this proposed designation of critical habitat. The information contained in our IEM was then used to develop a screening analysis of the probable effects of the designation of critical habitat for the Texas kangaroo rat (IEc 2021). We began by conducting a screening analysis of the proposed designation of critical habitat in order to focus our analysis on the key factors that are likely to result in incremental economic impacts. The purpose of the screening analysis is to filter out particular geographical areas of critical habitat that are already subject to such protections and are, therefore, unlikely to incur incremental economic impacts. In particular, the screening analysis considers baseline costs (i.e., absent critical habitat designation) and includes any probable incremental economic impacts where land and water use may already be subject to conservation plans, land management plans, best management practices, or regulations that protect the habitat area as a result of the Federal listing status of the species. Ultimately, the screening analysis allows us to focus our analysis on evaluating the specific areas or sectors that may incur probable incremental economic impacts as a result of the designation. The presence of the listed species in occupied areas of critical habitat means that any destruction or adverse modification of those areas is also likely to jeopardize the continued existence of the species. Therefore, designating occupied areas as critical habitat typically causes little if any incremental impacts above and beyond the impacts of listing the species. As a result, we generally focus the screening analysis on areas of unoccupied critical habitat (unoccupied units or unoccupied areas within occupied units). Overall, the screening analysis assesses whether designation of critical habitat is likely to result in any

additional management or conservation efforts that may incur incremental economic impacts. This screening analysis combined with the information contained in our IEM constitute what we consider to be our draft economic analysis (DEA) of the proposed critical habitat designation for the Texas kangaroo rate; our DEA is summarized in the narrative below.

In our evaluation of the probable incremental economic impacts that may result from the proposed designation of critical habitat for the Texas kangaroo rat, first we identified, in the IEM dated April 30, 2021, probable incremental economic impacts associated with the following categories of activities: (1) agriculture; (2) transportation; (3) communications; (4) development; (5) oil and gas exploration and development; (6) other power generation; (7) transmission lines; (8) water or wastewater related; (9) land related; (10) vegetation management; and (11) other, non-specific activities. We considered each industry or category individually. Additionally, we considered whether their activities have any Federal involvement. Critical habitat designation generally will not affect activities that do not have any Federal involvement; under the Act, designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies. If we list the species, in areas where the Texas kangaroo rat is present, Federal agencies would be required to consult with the Service under section 7 of the Act on activities they authorize, fund, or carry out that may affect the species. If, when we list the species, we also finalize this proposed critical habitat designation, Federal agencies would be required to consider the effects of their actions on the designated habitat, and if the Federal action may affect critical habitat, our consultations would include an evaluation of measures to avoid the destruction or adverse modification of critical habitat.

In our IEM, we attempted to clarify the distinction between the effects that would result from the species being listed and those attributable to the critical habitat designation (i.e., difference between the jeopardy and adverse modification standards) for

the Texas kangaroo rat's critical habitat. Because the designation of critical habitat for the Texas kangaroo rat is being proposed concurrently with the listing, it has been our experience that it is more difficult to discern which conservation efforts are attributable to the species being listed and those which will result solely from the designation of critical habitat. However, the following specific circumstances in this case help to inform our evaluation: (1) The essential physical or biological features identified for critical habitat are the same features essential for the life requisites of the species, and (2) any actions that would result in sufficient harm or harassment to constitute jeopardy to the Texas kangaroo rat would also likely adversely affect the essential physical or biological features of critical habitat. The IEM outlines our rationale concerning this limited distinction between baseline conservation efforts and incremental impacts of the designation of critical habitat for this species. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of this proposed designation of critical habitat.

The proposed critical habitat designation for the Texas kangaroo rat totals 597,069 ac (241,625 ha) in six units, all of which are currently occupied by the species. In these areas, any actions that may affect the species or its habitat would also affect designated critical habitat. We anticipate consultations for projects where the species is locally absent (e.g., due to lack of habitat at the site-specific scale) but critical habitat is present to allow for movement of the species to be largely informal and resulting in mostly administrative costs and minor project adjustments to minimize impacts. For those formal consultations that may occur, they would most likely be of a magnitude that would involve both the species and critical habitat, and any reasonable and prudent alternatives to avoid jeopardy and/or adverse modification would be the same. Based on historical economic activity levels within the 5 counties overlapping proposed critical habitat for the Texas kangaroo rat, staff may be required to complete 1.2 formal

consultations, 39.8 informal consultations, and 4.2 technical assistances per year on average. The cost of addressing critical habitat as part of these consultations may range from $110,000 to $310,000 per year, depending on how many consultations are triggered by critical habitat alone. While this additional analysis will require time and resources, we believe that in most circumstances these costs would predominantly be administrative in nature and would not exceed $200 million in any single year. Therefore, based on the definition of significance in E.O. 12866, they would not be significant.

The entities most likely to incur incremental costs are parties to section 7 consultations, including Federal action agencies and, in some cases, third parties, most frequently State agencies or municipalities. Activities we expect would be subject to consultations that may involve private entities as third parties are farms and ranches acquiring funding through Federal agricultural programs, oil and gas production, and infrastructure projects that involve Federal funding or authorization. However, based on coordination efforts with State and local agencies, the cost to private entities in these sectors is expected to be relatively minor (administrative costs of less than $10,000 per consultation effort) and would not be significant (i.e., exceed $200 million in a single year).

In conclusion, the probable incremental economic impacts of the Texas kangaroo rat critical habitat designation are expected to be limited to additional administrative effort as well as minor costs of conservation efforts resulting from future section 7 consultations. Because all of the proposed critical habitat units are considered to be occupied by the species, and incremental economic impacts of critical habitat designation, other than administrative costs, are expected to be limited, few actions are anticipated to result in section 7 consultation for critical habitat only and associated project modifications. Thus, the annual administrative burden is unlikely to reach $200 million, which is the threshold for a significant regulatory action under E.O. 12866.

We are soliciting data and comments from the public on the DEA discussed above, as well as on all aspects of this proposed rule and our required determinations. During the development of a final designation, we will consider the information presented in the DEA and any additional information on economic impacts we receive during the public comment period to determine whether any specific areas should be excluded from the final critical habitat designation under authority of section 4(b)(2), our implementing regulations at 50 CFR 424.19, and the 2016 Policy. We may exclude an area from critical habitat if we determine that the benefits of excluding the area outweigh the benefits of including the area, provided the exclusion will not result in the extinction of this species.

Consideration of National Security Impacts

Section 4(a)(3)(B)(i) of the Act may not cover all DoD lands or areas that pose potential national-security concerns (e.g., a DoD installation that is in the process of revising its INRMP for a newly listed species or a species previously not covered). If a particular area is not covered under section 4(a)(3)(B)(i), then national-security or homeland-security concerns are not a factor in the process of determining what areas meet the definition of "critical habitat." However, the Service must still consider impacts on national security, including homeland security, on those lands or areas not covered by section 4(a)(3)(B)(i), because section 4(b)(2) requires the Service to consider those impacts whenever it designates critical habitat. Accordingly, if DoD, Department of Homeland Security (DHS), or another Federal agency has requested exclusion based on an assertion of national-security or homeland-security concerns, or we have otherwise identified national-security or homeland-security impacts from designating particular areas as critical habitat, we generally have reason to consider excluding those areas.

However, we cannot automatically exclude requested areas. When DoD, DHS, or another Federal agency requests exclusion from critical habitat on the basis of national-

security or homeland-security impacts, we must conduct an exclusion analysis if the Federal requester provides information, including a reasonably specific justification of an incremental impact on national security that would result from the designation of that specific area as critical habitat. That justification could include demonstration of probable impacts, such as impacts to ongoing border-security patrols and surveillance activities, or a delay in training or facility construction, as a result of compliance with section 7(a)(2) of the Act. If the agency requesting the exclusion does not provide us with a reasonably specific justification, we will contact the agency to recommend that it provide a specific justification or clarification of its concerns relative to the probable incremental impact that could result from the designation. If we conduct an exclusion analysis because the agency provides a reasonably specific justification or because we decide to exercise the discretion to conduct an exclusion analysis, we will defer to the expert judgment of DoD, DHS, or another Federal agency as to: (1) Whether activities on its lands or waters, or its activities on other lands or waters, have national-security or homeland-security implications; (2) the importance of those implications; and (3) the degree to which the cited implications would be adversely affected in the absence of an exclusion. In that circumstance, in conducting a discretionary section 4(b)(2) exclusion analysis, we will give great weight to national-security and homeland-security concerns in analyzing the benefits of exclusion.

In preparing this proposal, we have determined that the lands within the proposed designation of critical habitat for the Texas kangaroo rat are not owned or managed by DoD or DHS. Therefore, we anticipate no impact on national security or homeland security.

Consideration of Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security discussed above. To

identify other relevant impacts that may affect the exclusion analysis, we consider a number of factors, including whether there are permitted conservation plans covering the species in the area—such as HCPs, safe harbor agreements (SHAs), or CCAAs—or whether there are non-permitted conservation agreements and partnerships that may be impaired by designation of, or exclusion from, critical habitat. In addition, we look at whether Tribal conservation plans or partnerships, Tribal resources, or government-to-government relationships of the United States with Tribal entities may be affected by the designation. We also consider any State, local, social, or other impacts that might occur because of the designation.

When analyzing other relevant impacts of including a particular area in a designation of critical habitat, we weigh those impacts relative to the conservation value of the particular area. To determine the conservation value of designating a particular area, we consider a number of factors, including, but not limited to, the additional regulatory benefits that the area would receive due to the protection from destruction or adverse modification as a result of actions with a Federal nexus, the educational benefits of mapping essential habitat for recovery of the listed species, and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

In the case of the Texas kangaroo rat, the benefits of critical habitat include public awareness of the presence of Texas kangaroo rats and the importance of habitat protection, and, where a Federal nexus exists, increased habitat protection for the species due to protection from destruction or adverse modification of critical habitat. Alternatively, continued implementation of an ongoing management plan that provides conservation equal to or more than the protections that result from a critical habitat designation would reduce those benefits of including that specific area in the critical habitat designation.

After identifying the benefits of inclusion and the benefits of exclusion, we

carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction of the species. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Private or Other Non-Federal Conservation Plans Related to Permits Under Section 10 of the Act

HCPs for incidental take permits under section 10(a)(1)(B) of the Act provide for partnerships with non-Federal entities to minimize and mitigate impacts to listed species and their habitat. In some cases, HCP permittees agree to do more for the conservation of the species and their habitats on private lands than designation of critical habitat would provide alone. We place great value on the partnerships that are developed during the preparation and implementation of HCPs.

CCAAs and SHAs are voluntary agreements designed to conserve candidate and listed species, respectively, on non-Federal lands. In exchange for actions that contribute to the conservation of species on non-Federal lands, participating property owners are covered by an "enhancement of survival" permit under section 10(a)(1)(A) of the Act, which authorizes incidental take of the covered species that may result from implementation of conservation actions, specific land uses, and, in the case of SHAs, the option to return to a baseline condition under the agreements. We also provide enrollees assurances that we will not impose further land-, water-, or resource-use restrictions, or require additional commitments of land, water, or finances, beyond those agreed to in the agreements.

When we undertake a discretionary section 4(b)(2) exclusion analysis based on permitted conservation plans (such as CCAAs, SHAs, and HCPs), we anticipate consistently excluding such areas if incidental take caused by the activities in those areas

is covered by the permit under section 10 of the Act and the CCAA/SHA/HCP meets all of the following three factors (see the 2016 Policy for additional details):

a. The permittee is properly implementing the CCAA/SHA/HCP and is expected to continue to do so for the term of the agreement. A CCAA/SHA/HCP is properly implemented if the permittee is and has been fully implementing the commitments and provisions in the CCAA/SHA/HCP, implementing agreement, and permit.

b. The species for which critical habitat is being designated is a covered species in the CCAA/SHA/HCP, or very similar in its habitat requirements to a covered species. The recognition that the Service extends to such an agreement depends on the degree to which the conservation measures undertaken in the CCAA/SHA/HCP would also protect the habitat features of the similar species.

c. The CCAA/SHA/HCP specifically addresses that species' habitat and meets the conservation needs of the species in the planning area.

The proposed critical habitat designation includes areas that are covered by the following permitted plan providing for the conservation of the Texas kangaroo rat: the CCAA for the Texas Kangaroo Rat.

CCAA for the Texas Kangaroo Rat

The CCAA is an agreement between the Texas Parks and Wildlife Department and the Service that was finalized May 16, 2022, to provide a net conservation benefit for the Texas kangaroo rat in the historical range of the species. It is part of Texas Parks and Wildlife Department's application to the Service for an enhancement of survival permit under section 10(a)(1)(A) of the Act. The permit authorizes take of the Texas kangaroo rat, should it become listed as endangered or threatened. The permitted take would result from activities undertaken by eligible non-Federal landowners (participants) who are willing to engage in voluntary conservation actions on their properties for the Texas kangaroo rat in accordance with the CCAA and the terms and conditions of the permit.

The conservation activities in the CCAA are expected to benefit the Texas kangaroo rat by reducing fragmentation, increasing the connectivity of habitats, maintaining or increasing populations, and enhancing and restoring habitats. The restoration and management of habitat on enrolled lands is expected to help maintain and enhance existing populations of Texas kangaroo rats and support the establishment of additional populations through natural dispersal, translocation of wild individuals, or release of captive-reared individuals. The conservation measures recommended in the CCAA include the following: (1) prescribed grazing, (2) prescribed fire, (3) brush management, (4) early successional habitat maintenance and development, (5) disturbed field edge management, (6) native range planting and reseeding, (7) maintenance of unpaved roads, and (8) prairie dog colony conservation. Each of these measures would support the physical or biological features essential to the conservation of the species by maintaining or restoring the shortgrass or mixed-grass prairie, providing a disturbance regime, and/or conserving Texas kangaroo rat home range or territory features.

Landowners who enroll their lands in the CCAA may continue to engage in activities related to agricultural operations and agritourism, but the CCAA does not cover activities such as energy development and production, commercial mining, public transportation, or residential or commercial development. Participants in the CCAA will work with the Texas Parks and Wildlife Department and agree to implement appropriate conservation measures from those listed above for the benefit of the Texas kangaroo rat and will allow access by Texas Parks and Wildlife Department staff onto their property for purposes related to the conservation measures, technical assistance, and/or conservation monitoring. The CCAA will be in place until 2032 but may be renewed prior to expiration.

Should participants choose to enroll in the CCAA, we would consider excluding enrolled lands from the final critical habitat designation. Additionally, we are requesting

information supporting a benefit of excluding any other areas from the critical habitat designation. Based on our evaluation of the information we receive, we may determine that we have reason to exclude one or more areas from the final designation.

Summary of Exclusions Considered Under Section 4(b)(2) of the Act

We have reason to consider excluding the following areas under section 4(b)(2) of the Act from the final critical habitat designation for the Texas kangaroo rat: any lands enrolled under the CCAA for the Texas Kangaroo Rat. We specifically solicit comments on the inclusion or exclusion of such areas. We also solicit comments on whether there are potential economic, national security, or other relevant impacts from designating any other particular areas as critical habitat. As part of developing the final designation of critical habitat, we will evaluate the information we receive regarding potential impacts from designating the areas described above or any other particular areas, and we may conduct a discretionary exclusion analysis to determine whether to exclude those areas under authority of section 4(b)(2) and our implementing regulations at 50 CFR 424.19. If we receive a request for exclusion of a particular area and after evaluation of supporting information we do not exclude, we will fully describe our decision in the final rule for this action.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Regulatory Planning and Review—Executive Orders 12866, 13563, and 14094

Executive Order 14094 reaffirms the principles of E.O. 12866 and E.O. 13563 and states that regulatory analysis should facilitate agency efforts to develop regulations that serve the public interest, advance statutory objectives, and are consistent with E.O. 12866, E.O. 13563, and the Presidential Memorandum of January 20, 2021 (Modernizing Regulatory Review). Regulatory analysis, as practicable and appropriate, shall recognize distributive impacts and equity, to the extent permitted by law. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this final rule in a manner consistent with these requirements.

E.O. 12866, as reaffirmed by E.O. 13563 and E.O. 14094, provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB) will review all significant rules. OIRA has determined that this rule is not significant.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 et seq.), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 et seq.), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e.,

small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine whether potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

Under the RFA, as amended, and as understood in light of recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself; in other words, the RFA does not require agencies to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure

that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies would be directly regulated if we adopt the proposed critical habitat designation. The RFA does not require evaluation of the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities would be directly regulated by this rulemaking, the Service certifies that, if made final as proposed, the proposed critical habitat designation will not have a significant economic impact on a substantial number of small entities.

In summary, we have considered whether the proposed designation would result in a significant economic impact on a substantial number of small entities. For the above reasons and based on currently available information, we certify that, if made final, the proposed critical habitat designation would not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare statements of energy effects when undertaking certain actions. In our draft economic analysis, we did not find that this proposed critical habitat designation would significantly affect energy supplies, distribution, or use. Oil and gas activities are among the more common Federal activities that occur within the range of the Texas kangaroo rat (IEc 2021, Exhibit 4; Service 2021, pp. 9–10). The U.S. Army Corps of Engineers currently consults with the Service to permit impacts to waters of the United States resulting from power generation

and oil and gas exploration and development in all the counties in the proposed critical habitat units under section 7 of the Act. As discussed in the draft economic analysis, the costs associated with consultations related to occupied critical habitat would be largely administrative in nature and are not anticipated to reach $200 million in any given year based on the anticipated annual number of consultations and associated consultation costs, which are not expected to exceed $310,000 per year (2021 dollars) (IEc 2021, pp. 10, 16–17). Therefore, this action is not a significant energy action, and no statement of energy effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq*.), we make the following finding:

(1) This proposed rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or Tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and Tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding," and the State, local, or Tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child

Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions are not likely to destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule would significantly or uniquely affect small governments because it is not anticipated to reach a Federal mandate of $200 million in any given year; that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Consequently, we do not believe that the proposed critical habitat designation

would significantly or uniquely affect small government entities. Therefore, a small government agency plan is not required.

Takings—Executive Order 12630

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the Texas kangaroo rat in a takings implications assessment. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish any closures, or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed for the proposed designation of critical habitat for the Texas kangaroo rat, and it concludes that, if adopted, this designation of critical habitat does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this proposed rule does not have significant federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this proposed critical habitat designation with, appropriate State resource agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of

Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the proposed rule does not have substantial direct effects either on the States, or on the relationship between the Federal government and the States, or on the distribution of powers and responsibilities among the various levels of government. The proposed designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical or biological features of the habitat necessary for the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist State and local governments in long-range planning because they no longer have to wait for case-by-case section 7 consultations to occur.

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) of the Act would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule would not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, this proposed rule identifies the physical or biological features essential to the conservation of the species. The proposed areas of critical habitat are presented on maps, and the proposed rule

provides several options for the interested public to obtain more detailed location information, if desired.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain information collection requirements, and a submission to OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) is not required. We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

Regulations adopted pursuant to section 4(a) of the Act are exempt from the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) and do not require an environmental analysis under NEPA. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This includes listing, delisting, and reclassification rules, as well as critical habitat designations. In a line of cases starting with *Douglas County* v. *Babbitt*, 48 F.3d 1495 (9th Cir. 1995), the courts have upheld this position.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes on a government-to-government basis. In accordance with Secretaries' Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to

Indian culture, and to make information available to Tribes. We have determined that no Tribal lands fall within the boundaries of the proposed critical habitat for the Texas kangaroo rat, so no Tribal lands would be affected by the proposed designation.

References Cited

A complete list of references cited in this rulemaking is available on the internet at *https://www.regulations.gov* and upon request from the Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Arlington Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Plants, Reporting and recordkeeping requirements, Transportation, Wildlife.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

2. Amend § 17.11, in paragraph (h), by adding an entry for "Kangaroo rat, Texas *(Dipodomys elator)*" to the List of Endangered and Threatened Wildlife in alphabetical order under MAMMALS to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * * * *				
MAMMALS				
* * * * * * *				
Kangaroo rat, Texas	*Dipodomys elator*	Wherever found	E	[*Federal Register* citation when published as a final rule]; 50 CFR 17.95(a).[CH]
* * * * * * *				

3. Amend § 17.95, in paragraph (a), by adding an entry for "Texas Kangaroo Rat *(Dipodomys elator)*" after the entry for "San Bernardino Kangaroo Rat *(Dipodomys merriami parvus)*", to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

(a) *Mammals*.

* * * * *

Texas Kangaroo Rat *(Dipodomys elator)*

(1) Critical habitat units are depicted for Childress, Cottle, Hardeman, Wichita, and Wilbarger Counties, Texas, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of the Texas kangaroo rat consist of the following components:

(i) Loose loam/clay-loam soils;

(ii) Shortgrass or mixed-grass prairie with forbs and less than 50 percent woody canopy cover;

(iii) Early successional grassland habitat often created and maintained by a disturbance regime (e.g., grazing, fire);

(iv) Proportional mixture of short-statured vegetation (i.e., herbaceous plant species observed at a shortened height rather than their potential maximum height) and bare ground (i.e., at microscale);

(v) Structure that provides uplift for burrows (e.g., prairie mound, shrub, manmade berm) in areas not prone to flooding; and

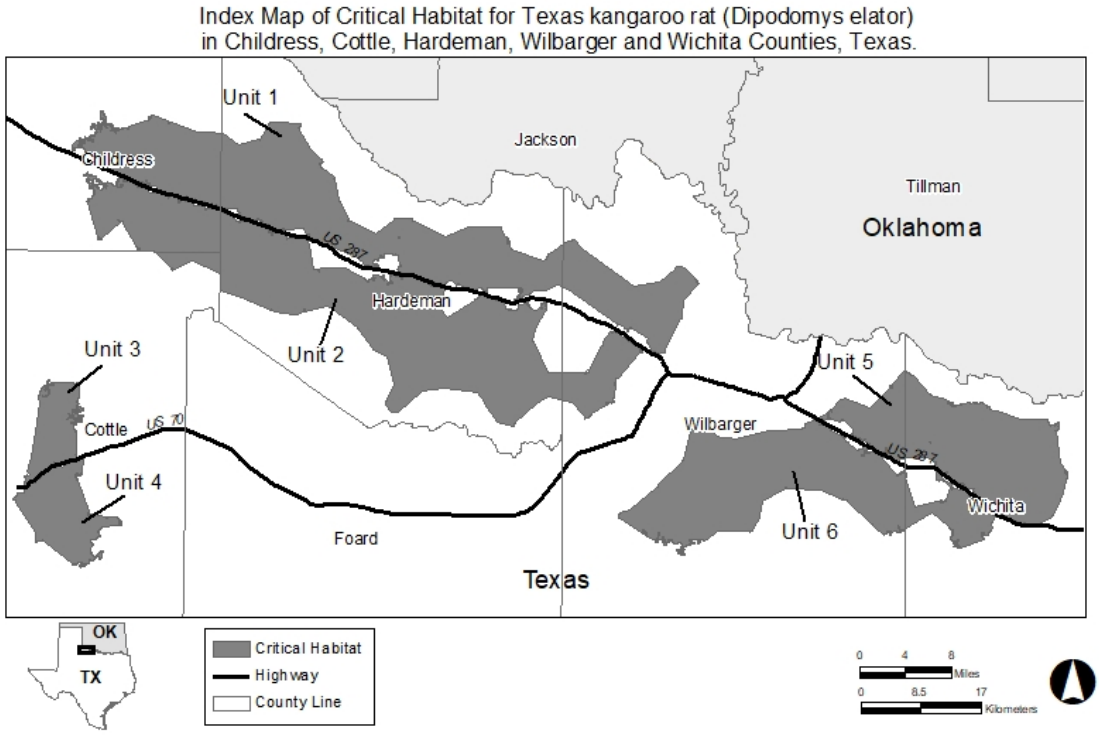
(vi) Habitat connectivity that supports movement and dispersal of Texas kangaroo rats (e.g., open spaces that lack barriers such as large paved roads or dense trees and shrubs).

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, paved roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of the final rule.

(4) Data layers defining map units were created using a geographic information system (GIS), which included Texas kangaroo rat locations, potential habitat modeling, waterways (i.e., streams and rivers), aerial imagery, and StreetMap USA (for highways and cities). Critical habitat unit areas were identified using a range-wide map of potential habitat modeled on the basis of the association of the Texas kangaroo rat with specific soil and land-cover types. Potential barriers to dispersal (i.e., rivers, wide paved roads, and large cities) were used to divide habitat blocks into separate units. Possible travel corridors between units were identified by the presence of unpaved roads or appropriate land cover based on aerial imagery, recent Texas kangaroo rat detections, and the absence of barriers to dispersal. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site at *https://fws.gov/office/arlington-ecological-services*, at *https://www.regulations.gov* at Docket No. FWS-R2-ES-2021-0143, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map follows:

Figure 1 to Texas Kangaroo Rat *(Dipodomys elator)* paragraph 5

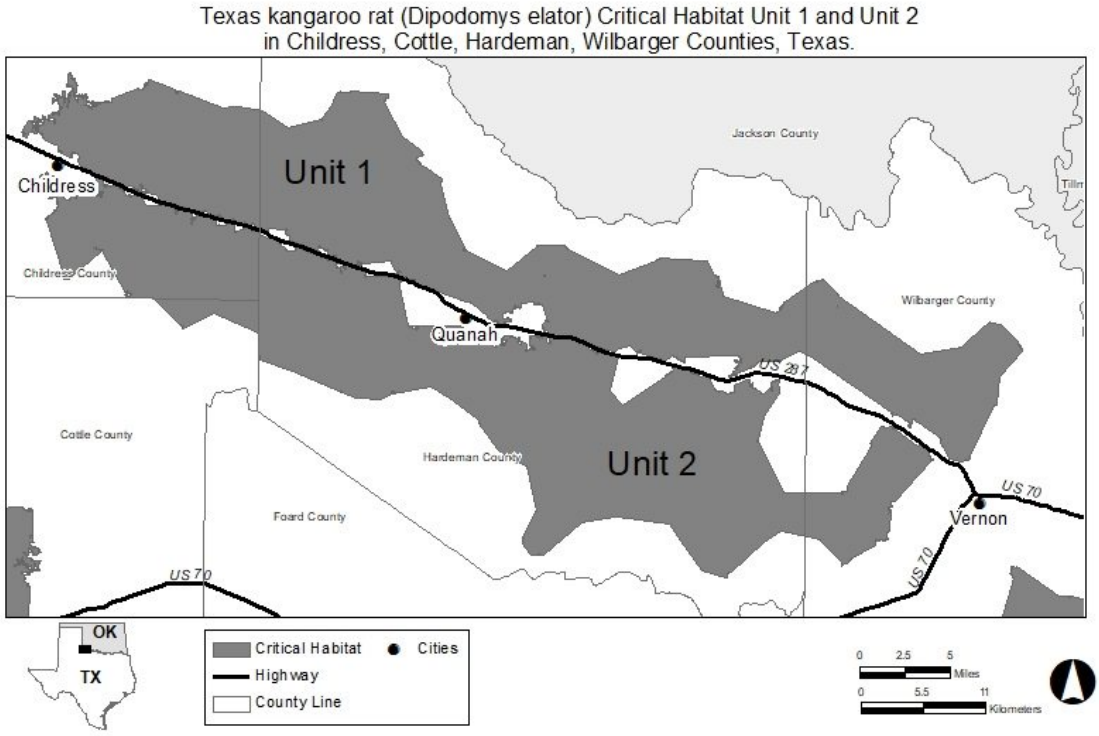


(6) Unit 1: North of U.S. 287 (Childress, Hardeman, and Wilbarger Counties, Texas).

(i) Unit 1 consists of 170,078 ac (68,828 ha) in private ownership and management in Childress, Hardeman, and Wilbarger Counties, Texas.

(ii) Map of Units 1 and 2 follows:

Figure 2 to Texas Kangaroo Rat *(Dipodomys elator)* paragraph (6)(ii)



(7) Unit 2: South of U.S. 287 (Childress, Cottle, Hardeman, and Wilbarger Counties, Texas).

(i) Unit 2 consists of 188,211 ac (76,166 ha) in private ownership and management in Childress, Cottle, Hardeman, and Wilbarger Counties, Texas.

(ii) Map of Unit 2 is provided in paragraph (6)(ii) of this entry.

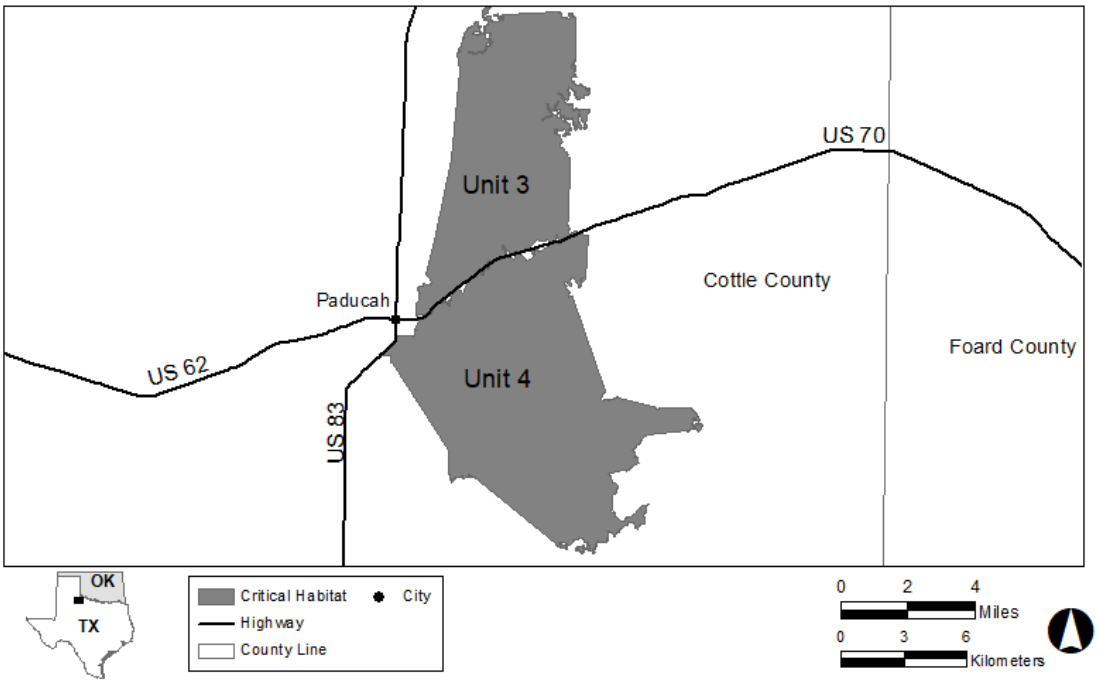
(8) Unit 3: North of U.S. 70 (Cottle County, Texas).

(i) Unit 3 consists of 17,035 ac (6,894 ha) in private ownership and management in Cottle County, Texas.

(ii) Map of Units 3 and 4 follows:

Figure 3 to Texas Kangaroo Rat *(Dipodomys elator)* paragraph (8)(ii)

Texas kangaroo rat (Dipodomys elator) Critical Habitat Unit 3 and Unit 4 in Cottle County, Texas.



(9) Unit 4: South of U.S. 70 (Cottle County, Texas).

(i) Unit 4 consists of 26,727 ac (10,816 ha) in private ownership and management in Cottle County, Texas.

(ii) Map of Unit 4 is provided in paragraph (8)(ii) of this entry.

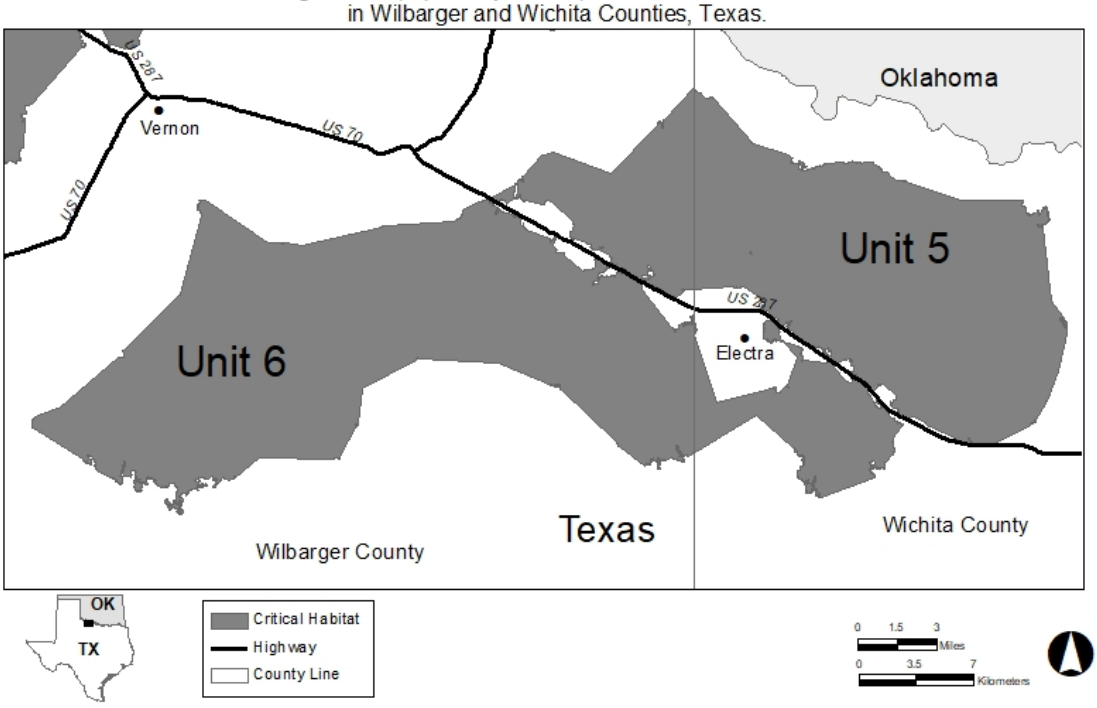
(10) Unit 5: North of U.S. 287 (Wilbarger and Wichita Counties, Texas).

(i) Unit 5 consists of 84,004 ac (33,995 ha) in private ownership and management in Wilbarger and Wichita Counties, Texas.

(ii) Map of Units 5 and 6 follows:

Figure 4 to Texas Kangaroo Rat *(Dipodomys elator)* paragraph (10)(ii)

Texas kangaroo rat (Dipodomys elator) Critical Habitat Unit 5 and Unit 6
in Wilbarger and Wichita Counties, Texas.



(11) Unit 6: South of U.S. 287 (Wilbarger and Wichita Counties, Texas).

(i) Unit 6 consists of 111,014 ac (44,926 ha) in private ownership and management in Wilbarger and Wichita Counties, Texas.

(ii) Map of Unit 6 is provided in paragraph (10)(ii) of this entry.

* * * * *

Wendi Weber,
Acting Director,
U.S. Fish and Wildlife Service.

[FR Doc. 2023-17671 Filed: 8/16/2023 8:45 am; Publication Date: 8/17/2023]